On Iterative Infixation

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1. Introduction

Iterative infixation is commonly found in language play and disguises (also collectively known as ludlings). Certain varieties of North American English, for example, have a game called *Ubbi-Dubbi*, in which *-ub-*, phonetically [ʌb], is inserted before the nucleus of each source syllable (e.g., *speaking* → *sp**ub**eak**ub**ing*[1] [ˈspʌbiˌkʌbɪŋ], *extra* → ***ub**extr**ub**a* [ˈʌbɛksˌtɹʌbə]). Another well-known example is the *Lingua do Pê* game found in Brazilian Portuguese, in which *-pV(C)-* is inserted after the nucleus of each source syllable, where *V(C)* is a copy of the rhyme of the preceding syllable (e.g., *menina* → *me**pe**ni**pi**na**pa***; (Guimarães & Nevins, 2006; Sherzer, 1982). While canonical iterative infixing ludlings tend to be monosyllabic, the inserted string may vary in size and segmental content. For example, in Hausa, there are games that require insertions of monosyllables (e.g., *-bV-*, *-sV-*), while others require the insertion of *-gVdV-* or *-ʔVsVdV-*. In Albanian, the "gjuha e zoqve" (the tongue of the birds) language requires the insertion of "xh" [dʒ] before each source syllable. Thus *ruga* 'street' becomes ***xh**ru**xh**ga* [dʒrudʒga] (Pound, 1963: 19). It has even been reported that there is a game in Cypriot Greek where *-kVkVrdVrV(C)kVkV(C)-* is inserted after each source syllable. Thus, *alékos* 'Alec' becomes ***a**kakárdarakaká**l**e**kekérderekeké**kos**kokórdoroskokós*** (Pound, 1963: 20). Iterative infixal ludlings can be divided into two subtypes, prefixing and suffixing, if the inserted string is understood to be attaching with respect to some unit within the source string. Iterative infixal ludlings are predominantly suffixing. While prefixing games are found as well, they overwhelmingly involve the insertion of fixed segments (the English *Ubbi-Dubbi* game, Hausa *dà-*, etc.), while suffixing games often involve fixed segmentism along with partial reduplication. Reduplicative iterative infixing ludlings without fixed segmentism are not attested.

Patterns of iterative infixal ludling (IIL), and ludling operations in general, have long piqued the interests of linguists, in particular phonologists and morphologists, for they provide fertile grounds for testing the power and limitations of theories of non-linear phonology and morphology (e.g., Alidou, 1997; Bagemihl, 1988, 1995; Broselow & McCarthy, 1983/1984; Conklin, 1956; Guimarães & Nevins, 2006; Hombert, 1986; Lehiste, 1985; McCarthy, 1991; McCarthy & Prince, 1986; Yip, 1982, 1999). Its utility for linguistic investigation aside, IIL itself also presents a host of unique properties that demand explanation. This paper addresses three such properties: affixal iterativity, segmental copying, and output metrical wellformedness. The main goal of this paper is to defend the idea that the first two of the three properties characteristic of IIL, affixal iterativity and segmental copying, follow from the last, namely, output metrical wellformedness. This paper is organized as follows. Section 2 discusses the characteristics of IIL and the general puzzles raised by it. Section 3 advances a theory that derives these major characteristics of IIL from the prosodic anchoring properties of output forms. I then survey past and current theories of IIL in Section 4, arguing that none is adequate in capturing all three properties of IIL in a unified and principled way. Implications of this work for theories of reduplication and the conclusion appear in Section 5.

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[1] All iterative infixal materials cited are bolded.

2. Properties of iterative infixal ludlings

2.1. Affixal iterativity

The first defining characteristic of IIL, affixal iterativity, invites the question: which factors, if any, motivate the multiple occurrences of near identical affixal materials in the surface forms? Infixal ludlings are not intrinsically iterative. Many games require the insertion of an infix only once. For example, in Japanese, *nosá* is inserted after the first syllable of each source word, as shown by the transformation of the sentence *watákuši wá ŋakó e íkimásu* 'I am going to school' in (1).

(1)

Japanese	-nosá-
watákuši	wá**nosá**takuši
wá	wá**nosá**
ŋakó	ŋa**nosá**ko
e	é**nosa**
íkimásu	í**nosá**kimásu

Note that, while infixation is not contingent on iterativity, iterativity seems to be contingent on infixation. Iterative affixation of the non-infixal kind, for example, is not attested. That is, no game requires iterative prefixation or suffixation to the source word. This asymmetric dependency between iterativity and infixation deserves an explanation. Iterative phonological properties are often assumed to be an emergent property of the grammar, rather than a matter of stipulation (e.g., iterative foot parsing and iterative epenthesis). To the extent that iterative infixation can be treated on par with canonical affixation processes in natural languages, the iterative application of a morphological operation, all else being equal, should be accounted for in a principled manner. It should be noted that non-iterative infixal ludlings involve only fixed segmentism, and rarely, if at all, require partial reduplication. This feature, thus, also differentiates non-iterative infixal ludlings from iterative ones.

2.2. Segmental copying and directional asymmetry

IIL often shows partial phonological identity between the affix and the source material. This type of partial identity relation may recur within the same inserted string. For example, in the Hausa *-gVdV-*, the inserted string contains two copies of the nucleus of the source syllable.

(2)

Hausa		-gVdV-
kàasúwáa 'market'	⇒	kà**gàdà**sú**gúdú**wáa
búuláalàa 'whip'	⇒	bù**gùdù**lá**gádá**làa
tàakàlmíi 'shoe'	⇒	tà**gàdà**ká**gádá**lmíi
màimúnàa 'person name'	⇒	mà**gàdà**imú**gúdú**nàa

The nature of this phonological identity relationship is non-trivial since the identical strings may be at a distance from each other. Thus, for example, there is a game which requires the insertion of *-hVlefVC-* after each source-word syllable (3). Of interest here is the fact that, while the inserted string is trisyllabic, only the first and last syllables of the inserted string show partial identity with the source syllable. The medial syllable of *-hVlefVC-* crucially contains a fixed nucleus, *-e-*. Thus, *kain* becomes *kain**hainlefain***, not **kain**hainlainfain***.

(3)

	-hV(C)lefV(C)- (Pound, 1963: 115)
kain	kain**hainlefain**
erschlug	er**herlefer**schlug**huglefug**
den	den**henlefen**
Abel	a**halefa**bel**hellefel**

In addition to providing a principled account for the local and long-distance dependency relation between the source and inserted string, a theory of IIL should ideally be able to explain why segmental

copying is found mainly in suffixing infixal games. As alluded to in the introduction, prefixing IIL overwhelmingly involves fixed segmentism, while suffixing IIL often involves partial copying as well as fixed segmentism (cf. Bagemihl, 1988, 1995; McCarthy, 1991). To be sure, prefixing IIL with partial copying is attested. For example, one variant of the Língua de Pê game in Brazilian Portuguese requires *-pV(C)-* before the source syllable. Thus [ˈbɔlɐ] 'ball' becomes ***pɔ***.bɔ.***pa***.la. To the extent that the paucity of prefixing IIL with partial copying reflects a general typological tendency of IIL, a theory of IIL must offer a principled explanation for this asymmetry.

2.3. Output rhythmic alternation

IIL often imposes strict metrical conditions on output forms. In particular, many examples of IIL display a perfect rhythmic alternation of stressed and unstressed syllables. Illustrative examples of such an output rhythmic restriction come from a set of Jerigonza word games in various dialects of Spanish (Piñeros, 1998). In the Peruvian version of Jerigonza, for example, *cha-* is prefixed to every syllable of the source word. In the Colombian version, *-pV-* appears after every syllable of the word, while, in the Costa Rican version *-pV-* appears to the right of every vowel of the source syllable, separating the coda from its source syllable affiliation. Crucially, outputs of Jerigonza always have an alternating stress pattern where every source syllable carries either primary or secondary stress; the contrastive stress pattern of the source word is thus neutralized.

(4)	Source	Gloss	Colombian	Costa Rican	Peruvian
	can.ción	'song'	càm.**pa**.cióm.**po**	cà.**pa**n.ció.**po**n	**cha**.càn.**cha**.ción
	ma.és.tro	'teacher'	mà.**pa**.ès.**pe**.tró.**po**	mà.**pa**.è.**pe**s.tró.**po**	**cha**.mà.**cha**.ès.**cha**.tró
	pájaro	'bird'	pà.**pa**.jà.**pa**.ró.**po**	pà.**pa**.jà.**pa**.ró.**po**	**cha**.pà.**cha**.jà.**cha**.ró

This type of rhythmic restriction on IIL-transformed outputs is apparent even in tonal languages. For example, the *hábàʔábà* game in Hausa requires the insertion of *-bV-* after the vowel of each source syllable, regardless of whether that vowel is followed by a coda consonant. In addition to infixation, transformed words are characterized by two additional prosodic restrictions: (i) long vowels in source syllables are uniformly shortened in the transformed word; and (ii) transformed words are parsed into disyllabic feet with an alternating High-Low tone pattern (the High tone always falls on the source syllable, the Low tone on the inserted syllable).

(5)	Hausa *hábàʔábà*		
	gidaa	gi**bì**da	'house'
	màskíi	má**bà**skí	'oily'
	màimúnà	mái**bài**mú**bù**ná	'Maimuna (name)'
	hátsíi	há**bà**tsí	'millet'
	tàabármáa	tá**bà**bá**bà**rmá	'mat'

Hausa also has a prefixing game where *dà-* is inserted before each source syllable in order to form an iamb (e.g., *dáudàa* 'personal name' → ***dà***.*dáu*.***dà***.*dáa*). Of particular interest here is the fact that when the source syllable *dà-* is "prefixed" to is short, the source syllable is lengthened (e.g., *ʔàbù* 'thing' → ***dà***.*ʔáa*.***dà***.*búu*). A quick survey of IIL patterns documented in Pound (1963) reveals that outputs of IIL may be parsed into strings of disyllabes, trisyllables, or tetrasyllables (6). Disyllabic strings can be trochaic or iambic. Trisyllabic strings may form dactyls, amphibrachs, or anapests. Tetrasyllables, on the other hand, may show patterns of primus or quartus paeons.

(6) Typology of output metrical conditions in iterative infixing ludlings

a.

Disyllabic	
Trochee	Hausa: hátsíi 'millet' → (há**bà**)tsí German: knabe 'boy' → (knà**bi**)(bé**bi**)
Iamb	Hausa: ʔàbù 'thing' → (**dà**ʔáa)(**dà**búu) Tagalog: salá:mat 'thank you' → (s**ag**á:)(l**ag**á:)(m**ag**át)

b.	*Trisyllabic*	
	Dactyl	Hausa: búuláalàa 'whip' → (bù**gùdù**)(lá**gádá**)làa
	Amphibrach	Tagalog: hindíq 'no, not' → (hi**gí:di**n)(di**gí:di**n)
	Anapest	Greek: alékos 'Alec' → (a**kakár**)**darakaká**(le**kekér**)**derekeké**(kos**kokór**)**doroskokós**
c.	*Tetrasyllabic*	
	Primus paeon	Hausa: màimúnàa 'personal name' → (màa**ʔàsàdà**i)(múu**ʔúsúdú**)nàa
	Quartus paeon	Greek: alékos 'Alec' → a**kakár**(**darakaká**)le**kekér**(**derekeké**)kos**kokór**(**doroskokós**)

The fact that strict output rhythmic alternation correlates with the presence of affixal iterativity points to a curious convergence that warrants additional examinations. In particular, since strict output rhythmic alternation implies the iterative parsing of output forms into well-formed metrical constituents, might it not be the case that affixal iterativity is motivated by the same factors that enforce perfect rhythmic alternation in IIL outputs? The next section advances a theory of IIL that exploits this very convergence of facts.

3. A theory of iterative infixation

The basic proposal of this paper is that affixal iterativity, segmental copying, and output rhythmic alternation are all, at their cores, consequences of source syllable alignment requirements stipulated by the game. To illustrate this concretely, let us revisit the case of the Hausa *hábàʔábà* game (5), which involves the insertion of *-b-* after the nucleus of each source syllable (except the last) plus a copy of the vowel of the source syllable. Following the phonological subcategorization view of infixation (Broselow & McCarthy, 1983/1984; McCarthy & Prince, 1986; Paster, 2006; Yu, 2003, 2007), the affix *-b-* is analyzed as left-subcategorizing for the nucleus of a source syllable. The subcategorization requirement here is stated in terms of the alignment of the left edge of *-b-* with the right edge of the head mora of a source syllable (7).

(7) ALIGN(*-b-*,L,μ_{SH},R)
The left edge of *-b-* must coincide with the right edge of the head mora of a source syllable.

Since no *hábàʔábà*-transformed words ever violate this alignment requirement, I shall not consider any candidates that violate this alignment restriction in the following evaluations. (The issue of the copied vowel will be examined in due course.) Another idiosyncrasy of the *hábàʔábà* game worth mentioning up front is its requirement of non-finality. Recall that *-bV-* appears after each source syllable except the last. It is tempting, of course, to attribute this non-finality requirement to some intrinsic properties of IIL. This pursuit is, however, futile, as non-finality is not even an inherent property of iterative infixing ludling in Hausa itself. The *ʔàsàdàsà* game in Hausa inserts *-sV-* after each source syllable, for example. Unlike the *hábàʔábà* game, however, *-sV-* can appear word-finally.

(8) Hausa *ʔàsàdàsà* word game (Alidou, 1997: 42-43)

nóonòo	'milk'	nó**sò**nó**sò**
sàndáa	'stick'	sán**sà**dá**sà**
kwáryáa	'calabash'	kwár**sà**yá**sà**
bíŋgèl	'personal name'	bín**sì**gél**sè**

Non-finality is, therefore, not an intrinsic property of iterative infixing ludling *per se*, but rather a feature that must be stipulated for a particular game. To this end, I assume that, in the co-phonology of the *hábàʔábà* game, the NON-FINALITY constraint, which requires the extrametricality of word-final syllables, must be undominated. For the sake of conciseness, any candidate that violates NON-FINALITY (i.e., footing of the final source syllable) will not be considered further.

Output rhythmic alternation is a consequence of the interaction between the proper anchoring of source syllables and constraints on the wellformedness of feet in the language (see also Piñeros, 1998). Constraints requiring the edges of each input syllable to be aligned with some output foot are implemented here in terms of prosodic anchoring (McCarthy, 2000). Of particular interest here is the constraint ANCHOR(σ)L, which specifies that the left edge of each source syllable must correspond to the left edge of a foot in the output. As well-formed feet must be disyllabic in this game, as shown in 0, both prosodic anchoring (i.e., ANCHOR(σ)L) and syllabic foot binarity can be simultaneously satisfied via the strategy of augmentation (particularly, in the form of vowel copying). Candidates such as 0b are ruled out due to the presence of excess source syllables that are not aligned with the left edge of a foot. Affixing *-b-* without augmentation (see 0c) would fatally violate FOOTBINARITY-σ.

(9) ANCHOR(σ)L: The leftmost element of a syllable in the source form corresponds to the leftmost element of a foot in the output.
FOOTBINARITY-σ (FTBIN): All feet are binary at the syllabic level.
PARSE-σ: Every syllable must be footed.

(10) Source word: *mùstáfà* 'person name'

		mùstáfà, *-b-*	FTBIN	ANCHOR(σ)L
☞	a.	(mú.**bù**s)(tá.**bà**)fá		*
	b.	(mú.**bù**s)tá.fà		**!
	c.	(mú**bs**)(tá**b**)fá	*!	*

Let us now return to the issue of segmental copying. As noted, bisyllabicity of a foot is achieved by augmentation. Augmentation, in turn, is achieved by copying the nucleus of the source syllable (11)a, rather than by some form of default segment or syllable insertion (11)b.

(11)

		mùstáfà, *-b-*	FTBIN	ANCHOR(σ)L
☞	a.	(mú.**bù**s)(tá.**bà**)fá		
✋	b.	(mú.**bí**s)(tá.**bí**)fá		

This is an instance of template-driven compensatory reduplication (CR). ***Template-driven CR*** duplicates phonological materials for the purpose of satisfying output templatic requirements. For instance, in Tigrinya perfective stem formation (Rose, 1997), a triliteral root maps onto a CVCVC template completely (e.g., √sbr → *säbär-ä*); however, when a biliteral root is mapped onto the same template, the final consonant is duplicated (e.g., √zl → *zälä**l***). Yu (2005) found foot-based template-driven CR to be cross-linguistically quite common. Thus, the fact that foot-based output wellformedness requirements trigger compensatory reduplication in IIL points to an important area of convergence. Following the standard treatment of CR, phonological copying is motivated by the ranking DEP_{IO} >> INTEGRITY. That is, it is better to fulfill templatic requirements by way of CR than by fixed segment insertion. Note that two types of CR are at work here. Besides the need to fulfill a disyllabic "template," the wellformedness of the syllable augment also plays a role (see the failure of (13)c due to the highly ranked ONSET constraint). The DEP_{IO} >> INTEGRITY ranking predicts that default onset insertion (see (13)c) is just as undesirable as default vowel insertion.

(12) DEP_{IO}: An output segment must have an input correspondent.
INTEGRITY (McCarthy & Prince, 1995): No element of the input has multiple correspondents in the output.
ONSET: A syllable must have an onset.

(13)

	mùstáfà, -b-	ONSET	DEP_{IO}	INTEGRITY
☞	a. (mú.**bù**s)(tá.**bà**)fá			***
	b. (mú.**b**ís)(tá.**b**í)fá		*!*	
	c. (mú.**b**ís)(tá.**ʔ**à)fá		*!	
	d. (mú.**bù**s)(tá.**à**)fá	*!		*

CR does not lead to full duplication of the source syllable, however. Notice that the analysis presented thus far does not stipulate the iterative application of *b*-affixation. The subcategorization requirement of *-b-* only calls for its proper alignment when it is present. As long as the affix is present once (14), the candidate would satisfy any morpheme exponent realization requirement such as REALIZE-MORPH (Kurisu, 2001).

(14)

	mùstáfà, -b-	DEP_{IO}	INTEGRITY
☞	a. (mú.**bù**s)(tá.**bà**)fá		***
✋	b. (mú.**bù**s)(tá.**tà**)fá		***

Full source syllable duplication is avoided due to the ranking $\text{INTEGRITY}_{\text{SOURCE}}$ >> $\text{INTEGRITY}_{\text{AFFIX}}$. Segmental fission of a source segment bears more offenses than affixal segmental fission.[2] As the tableau in (15) illustrates, it is better to duplicate the affix *-b-* than to fully duplicate a source syllable (contrast (15)a with (15)b). Note that, while the onset of the source syllable may not be copied, its nucleus may still duplicate. This is due to the fact that, while the syllable augment can draw its onset from the affix *-b-*, no alternative avenue of segmental fission is available to supply a nucleus to the syllable augment. Default vowel insertion is not an option since DEP_{IO} dominates $\text{INTEGRITY}_{\text{SOURCE}}$ (see (15)c). Duplication of a coda consonant as the onset of an augmented syllable (e.g., *mùstáfà* ~ **mú**bù**stá**sà**fá*) is avoided presumably due to syllable role restrictions placed on surface corresponding segments (Rose & Walker, 2004).

(15)

	mùstáfà, -b-	DEP_{IO}	$\text{INTEGRITY}_{\text{SOURCE}}$	$\text{INTEGRITY}_{\text{AFFIX}}$
☞	a. (mú.**bù**s)(tá.**bà**)fá		*	*
	b. (mú.**bù**s)(tá.**tà**)fá		**!	
	c. (mú.**bù**s)(tá.ʔ**à**)fá	*!	*	

With regard to the nature of the CR-segments, a question that is immediately apparent is why the compensatory reduplicant always copies from the preceding source syllable (cf. (16)).

(16)

	mùstáfà, -b-	DEP_{IO}	$\text{INTEGRITY}_{\text{SOURCE}}$	$\text{INTEGRITY}_{\text{AFFIX}}$
☞	a. (mú.**bù**s)(tá.**bà**)fá		**	*
✋	b. (mú.**bà**$_i$s)(tá$_i$.**bà**$_i$)fá$_j$		**	*

Here, I adopt the framework of Directional Output Segmental Correspondence. The idea behind this approach is that output-identical segments stand in correspondence (Bat-El, 2006; Hansson, 2001; Rose & Walker, 2004; Yu, 2005). The effect of a constraint like (17) is that the copied material must come from the syllable before, rather than the one after the syllable augment. Candidates such as (18)b are ruled out by SCORRI_{L} because at least one pair of surface corresponding segments does not satisfy the precedence relation specified by SCORRI_{L}. Following Hansson (2007), surface correspondence relationships are assessed locally in correspondence chains; local vowel copying will therefore always be favored over long-distance copying alternatives (e.g., **(mú.**bù**s)(tá.**bù**)fá*).

[2] This treatment of the difference between source vs. affixal materials recalls the oft-cited proposed universal ranking, ROOT-FAITH >> AFFIX-FAITH (McCarthy & Prince, 1995: 364).

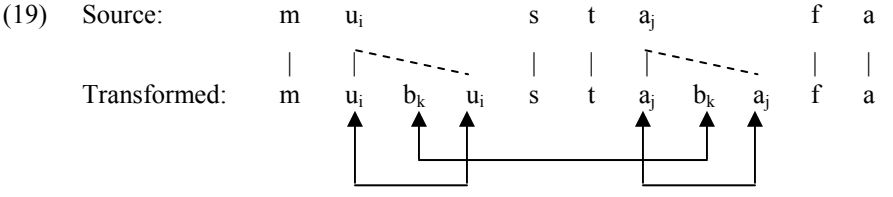
(17) Correspondence-S_iS_j ($SCORRI_L$) (cf. Hansson, 2001; Rose & Walker, 2004)
'If S_i is a segment in the output and S_j a correspondent of S_i in the output, S_i must precede S_j in the sequence of segments in the output (i > j).'

(18)

	mùstáfà, *-b-*	$SCORRI_L$
☞ a.	(mú.**bù**s)(tá.**bà**)fá	
b.	(mú.**bà**$_{iC}$s)(tá$_i$.**bà**$_{iC}$)fá$_j$	*!

To summarize, then, the present approach to IIL argues that, at its core, iterative infixal ludling is neither intrinsically iterative nor infixal. The infixal distribution of an affix is due to the fact that it subcategorizes for an edge of a phonological unit that does not necessarily coincide with a morphological boundary. Both affixal iterativity and segmental copying are features dependent on output metrical requirements. Nucleus or rhyme copying is triggered by the need to increase the size of the form in order to satisfy the source-syllable anchoring and metrical wellformedness requirements simultaneously. Full source-syllable reduplication is prevented by the need to preserve some level of source syllable uniqueness (as reflected in the ranking $\text{INTEGRITY}_{\text{SOURCE}}$ >> $\text{INTEGRITY}_{\text{AFFIX}}$). In lieu of full reduplication, the affix *-b-* is duplicated to supply an onset to the syllable augment. The diagram in (19) summarizes the various surface correspondence relationships. (The dashed lines indicate indirect correspondence relationships between input and output segments mediated through surface correspondence.)

(19)



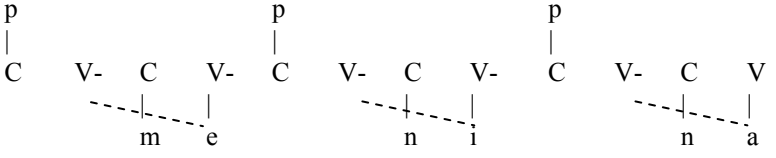
This analysis thus explains why iterativity is dependent on "infixation" and never the other way around: iterativity is epiphenomenal in the sense that there would be no need for the multiple occurrences of the affix if the game did not require the prosodic anchoring of source syllables. The affix only appears to be "infixing" multiple times because the loci of augmentation happen to interrupt the internal contiguity of the source form. Without prosodic anchoring of the source syllable, there would be no need for augmentation; without the need for augmentation, there would be no motivation for the (iterative) duplication of the affix. In the next section, I review, albeit briefly, previous approaches to IIL, highlighting important differences and commonalities between these earlier approaches and mine.

4. Alternative theories of iterative infixing ludling

4.1. Multi-planarity and the Morphemic Tier Hypothesis

Early non-linear theories of iterative infixation capitalize on the idea of a separate level of timing structure from the segmental melody and advocate placing separate affixes on distinct morphological planes (Morpheme Tier Hypothesis: McCarthy, 1986; Cole, 1987). The planar segregation approach analyzes the apparent "vowel copying" as a consequence of the spreading of the nearest non-ludling vowel to the empty vowel slot of the ludling infix.

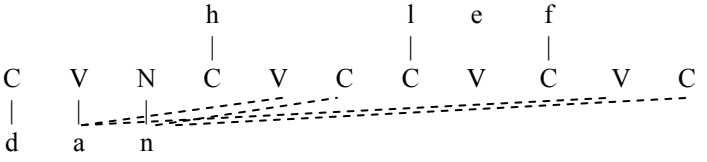
(20) menina → ***pe**me**pi**ni**pa**na



This spreading analysis makes one strong prediction. While rightward spreading of the vocalic material of the source syllable to an IIL suffix is easily captured, vowel copying in prefixing IIL is ruled out since leftward spreading is not possible without crossing association lines (20). This planar segregation approach runs into several interesting problems, however.

The first concerns the issue of association line crossing violation. To begin with, reduplicative prefixing IIL, as in (20)b, is in fact attested, albeit only in a vanishingly small set of languages (e.g., Brazilian Portuguese, Guimarães & Nevins, 2006). The existence of rhyme-copying IIL also calls into question the viability of the spreading analysis. As illustrated in (21), VC copying in the *-hV(C)lefV(C)-* game invariably incurs massive association line crossing violations.

(21) dan > dan**hanlefan**



Finally, the spreading analysis offers no insight into the issue of affixal iterativity. The multiple appearances of the inserted material must be independently stipulated. This issue of affixal iterativity has found an explicit treatment recently within an articulated model of precedence relations in phonology and morphology, however. This is the topic of the next section.

4.2. Iterative infixing ludling as multiprecedence

Following Raimy's (2000) lead to model temporal relations in phonological representation as linked lists, Guimarães & Nevins (2006) propose to account for the suffixal Língua de Pê game in terms of the following procedures: for every syllable Σ, add a new immediate precedence relation between the last segment of Σ and /p/ (22)a, then add a new immediate precedence relation between /p/ and the nucleus of Σ (22)b prior to linearization (22)c. Thus, affixal iterativity is captured in terms of the binding of the source syllables by a universal quantifier (i.e., *for every syllable*).

(22) a. #→ a→ r→ t→ e→ %

b. #→ a→ r→ t→ e→ %
↖ ↙ ↓↑
p p

c. #→ a→ r→ p→ a→ r→ t→ e→ p→ e→ %

The use of universal quantification, while adequate in enforcing iterative affixation, fails to capture any connection between affixal iterativity and the prosodic/rhythmic structure of IIL outputs, however. Affixal iterativity is generated by brute force, as it were. Thus, all else being equal, an account that does not require the stipulation of iterativity should be preferred.

5. Conclusion

This paper focuses on the treatment of infixing ludling, in particular, iterative infixing ludling. IIL is best viewed as a subtype of templatic ludling (following Bagemihl's 1995 four-way typology of ludling operations: infixal, templatic, reversing and replacement). Iterativity follows from output prosodic restrictions, which in turn are motivated by the prosodic anchoring requirement of the source syllables. Infixing ludling in general is no different from grammatical infixation. The affix targets certain phonological pivot points. IIL is essentially the fusion of infixing and templatic ludlings.

It should be emphasized that the nature of the output metrical requirements is very much idiosyncratic to the ludling pattern in question. Some forms of IIL demand disguised words to be

parsed into sequences of iambs, while others demand larger or more complicated groupings (e.g., the *-kVkVrdVrV(C)kVkV(C)-* game in Cypriot Greek). To be sure, this paper does not pretend to offer an exhaustive treatment of IIL patterns. The main goal is to advance a restricted theory of IIL and explore some of its consequences. The Hausa *hábàʔábà* case study is a simple illustration of how such an understanding of IIL can be implemented formally. Further research is needed to elucidate the intricate relations between output prosodic requirements and compensatory reduplication in IIL.

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