## Alliterative concord: both sides of the fence

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**Overview** Some instances of alliterative concord are non-local yet strictly phonological processes. Alliterative concord refers to concord that seems to be, at least partially, determined by similar segmental structures (Corbett 1991; see also Dobrin 1995, Sauvageot 1967, Dimitriadis 1997, Sande 2016, *i.a.*). This phenomenon has been put forward as a counter-example to strict modularity between morpho-syntax and phonology (Dimitriadis 1997, *i.a.*), since in models where the morpho-syntax precedes phonology, phonology should not be able to influence morpho-syntactic concord. Putting morpho-semantic concord aside, we focus here on the morpho-phonological side of concord, and propose an (exhaustive) classification of nominal concord according to two dimensions: (i) extent of morphological pre-specification of a morpheme, and (ii) extent of phonological copying from the stem.

**Background** Exponence in Distributed Morphology (Halle & Marantz 1997) is provided at the phonology-morphology interface by Vocabulary Insertion, which is the phonological realisation of a morpho-syntactic (set of) feature(s). Vocabulary Items that are initially underspecified for phonological material may copy phonological material in the phonological module (*cf.* Bye & Svenonius 2012).

Type A: Abuq/Arapesh, Bainuk In (1) and (2), the exponent of the agreement morpheme is entirely predictable from the phonology of the stem. In (1), the agreement morpheme is an exact copy of the final consonant, to the extent that even though /p/ is only a recently acquired phoneme in the language (through loanwords from Tok Pisin), it is copied in (1c). Similarly in (2), the agreement morpheme is an exact phonological copy of the stem, which is either comprised of a prefix+root (2a,b) or of a root only (2c). Again, it is the phonological form of the stem that determines the exponent of the agreement marker, which is especially clear when it comes from the root in (2c). Note there is also a fully specified agreement marker (2d), but only a small class of exclusively unprefixed nouns can be idiosyncratically marked as such. (This small class of nouns displays Type B concord, see below.)

(1) Abuq/Arapesh (Fortune 1942, Nekitel 1986, cited in Dobrin 1995/1997)

a. almil afu-l-i l-ahe' b. ihiaburuh afu-h-i h-ahe' butterfly good-CLH-ADJ CLH-went 'a good bird went' butterfly went'

c. paip apa d. pater ara pipe this priest this

(2) Bainuk (Sauvageot 1967)

**bu**-luhun um-bu b. **i**-luhun um-mi a. CM-vase this CM-vases these kata:ma-ŋo in-ka d. sahri in-no c. river-PROX this village this

**Analysis** Type A concord involves agreement morphemes, which correspond to phonologically underspecified exponents: CL  $\Leftrightarrow$  /RED/. The segmental information is exclusively determined by the phonology of its corresponding stem, from which all features are copied (full copy). Note that this phonological copying is non-local in nature, crossing syllables and even words. In the paper, we show that a Nevins 2010-style framework naturally allows for non-local phonological copying.

**Type B: Swahili** In complete contrast to (1)-(2), (3a) shows a pattern where the exponent of agreement morphology is decidedly not determined phonologically; rather the exponent is fully segmentally specified based on the morphological class that the agreement morpheme belongs to. Note that Swahili also displays Type A concord in (3b), where the agreement morpheme is copied from the stem.

(3) kalamu i-lianguka (Swahili; Katamba 2003) n-zuri y-angu CL9-fell pen.CL9 CL9-good CL9-mine 'My good pen fell.' b. ki-kapu ki-kubwa ki-lianguka ki-moja CL7-basket CL7-large CL7-one CL7-fell

**Analysis** Type B concord is the opposite of Type A: agreement morphemes correspond to fully segmentally specified exponents, as in (4). Nothing is copied from their corresponding stem.

(4) a.  $CL9 \Leftrightarrow /n-//adj$  b.  $CL9 \Leftrightarrow /i-/adj$ 

'One large basket fell.'

**Type C: Guébie** (5) shows an intermediate pattern: whilst the exponent of a non-human third person pronoun is not an exact copy of the stem, it nonetheless is delimited by some features of the final vowel of the stem. A pronoun with an antecedent stem ending in /i, i, i, i realised as  $[\epsilon]$ , see (5ab); similarly, in (5cd) /i, i-final antecedent stems are realised as [a], see Table 1.

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(5) Guébie (Sande 2017)
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a.	$\mathbf{k}^{\mathrm{w}}$ əl $\mathbf{i}^{2.2}$	'face'	b.	$\operatorname{tel} {f \epsilon}^{3.2}$	'snake'
	$\varepsilon$ - $^3$ kad $\varepsilon$ <sup>3.2</sup>	'It (face) is big.'		$\varepsilon$ - $^3$ kad $\varepsilon$ <sup>3.2</sup>	'It (snake) is big.'
c.	$6ite^{2.3}$	'house'	d.	$ma^1$	'butt'
	$a^{-3}$ kad $\varepsilon^{3.2}$	'It (house) is big.'		$a$ - $^3$ kad $\epsilon^{3.2}$	'It (butt) is big.'

Table 1: Partial phonological copy in non-human pronouns (adjusted from Sande 2017)

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		Final vowel of antecedent		3.SG pronoun vowel (either subject or object)	
	Class 1	u, ʊ, o, ɔ	<b>~</b>	υ	
	Class 2	i, ι, e, ε	$\rightarrow$	ε	
	Class 3	ə, a	$\rightarrow$	a	

Analysis Type C concord involves partially pre-specified segmental features, which are supplemented by phonological copying of underspecified features. Specifically, in Guébie some phonological features are prespecified: e.g., the pronoun is always [-ATR], irrespective of the [ATR] value of its antecedent stem. Similarly, height is pre-specified: high, (CL1) and mid (CL2). (By hypothesis CL3 is also pre-specified for height.) However, the [±back] value of a pronoun corresponds to that of its antecedent stem due to (again, non-local) phonological copying from an elided antecedent stem (see Sande 2017).

(6) a. [Pro Class 1] 
$$\Leftrightarrow$$
 [-ATR, +high] b. [Pro Class 2]  $\Leftrightarrow$  [-ATR, -high]

**Type D:** Frò?ò In Type D concord, an agreement morpheme has a uniform exponent, even though this property is not necessarily reflected in the stem. In (7a) agreement consistently involves a (voiceless/ voiced) dorsal, even though the stem contains no dorsal segments. Similarly, in (7b) agreement morphemes are consistently a coronal obstruent, though the stem does not contain any coronal obstruents. The same is true for all functional morphemes of the seven nominal classes in Frò?ò, but with different features.

(7)  $Fr \partial \partial \partial$  (Traoré in prep)

**Analysis** Type D concord involves partially pre-specified phonological features, which however are not supplemented by copying segmental information from the stem.

**Conclusion** We argue that an account that exclusively relies on fully specified agreement across the board dismisses the transparently visible role of non-local phonological copying. Though Vocabulary Items can be fully specified (Type B), they are not always (Type A,C,D). When underspecified for segmental material, they copy all segmental material from the stem (Type A), partially copy segmental material from the stem (Type C), or no copying from the stem takes place (Type D). In Type C concord it is, at least synchronically, accidental that some of the morphologically specified phonological properties sometimes coincide with an identical phonological property in their stems. That is, in Guébie it is a coincidence that the [ATR] and height values of antecedent stem and pronoun at times are identical ( $\sigma$ - $\sigma$ ,  $\varepsilon$ - $\varepsilon$ , a-a). The only non-accidental (predictable) property in Guébie non-human pronouns is [ $\pm$ back], which is due to phonological copying. Type D concord simply shows that this this accidental property can be more phonologically obvious.

Table 2 summarises the four types of morpho-phonological concord. The strength of the current proposal is that it correctly predicts that all logical patterns should converge into the four types identified here.

Table 2: Typology of morpho-phonological concord

	Morpho-phonology (VI)	Phonological copying from the stem	
Type A (Bainuk)	no segmental specification	full copy	
Type B (Swahili)	full segmental specification	no copy	
Type C (Guébie)	partial segmental specification	partial copy	
Type D (Fròʔò)	partial segmental specification	no copy	

Selected references: Corbett (1991). Gender. CUP. • Dobrin (1995). Theoretical consequences of literal alliterative concord. In CLS Proceedings. • Katamba (2003) In: The Bantu Languages. Routledge. • Nevins (2010). Locality in vowel harmony. MIT Press. • Sande (2017). Distributing morphologically conditioned phonology: Three cases from Guébie. PhD Diss. Berkeley. • Traoré (in prep.) The phonology of nominal domain in Frò?ò. Doctoral Diss. Frankfurt.