Directionality in Nkore-Kiga sibilant harmony: arbitrary or emergent?

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In Nkore-Kiga (Bantu E.14; Uganda; henceforth 'Kiga'; Hansson 2010), sibilants in the stem agree in anteriority: a stem with two sibilants may have [ʃ...ʃ] or [s...s], but disagreeing sequences like [s...ʃ] are prohibited. What makes Kiga unusual is that the distribution of [s] and [ʃ] is otherwise predictable from the following vowel (Hansson 2010, Hyman 2003): where sibilant harmony doesn't apply, [s] is allowed only before [i], and [ʃ] only before [e a u o]. Where sibilant harmony *does* apply, the anteriority of the rightmost sibilant is predictable, but other preceding sibilants deviate from the usual pattern to achieve agreement, as in (1). Thus, Kiga's sibilant harmony is strictly right-to-left: it is the rightmost sibilant in the stem that controls the agreement.

(1) Kiga agreement is controlled from the right

a.	/-SíS-a/	→ -ʃíʃa	*-síʃa, *-sísa	'sin'
b.	/-Sa:S-ire/	→ -sa:sire	*-ʃa:sire, *-ʃa:ʃire	'be in pain (perf.)'

This pattern of directionality poses an interesting conundrum for an Agreement By Correspondence analysis. Early work in ABC (Rose & Walker 2004, Hansson 2001, e.g.) built directionality into the definitions of harmony constraints, stipulating that the IDENT-CC constraints that drive agreement have Right-to-Left and Left-to-Right versions. However, if these constraints are standard markedness constraints that push for agreement, then they cannot actually control the direction of agreement. Even a specifically right-to-left constraint IDENT-C_RC_L-[anterior] (≈ 'a consonant must agree in anteriority with a correspondent to its left') is satisfied equally by progressive *or* regressive assimilation (2). As long as the IDENT-CC constraints are satisfied by agreement, incorporating directionality into them doesn't control the direction of assimilation; it can only restrict where agreement is required.

(2) The harmony constraints don't control the direction of assimilation

	/siʃa/→[ʃiʃa]	CORR-[+sibilant]	IDENT-C_RC_L-[ant]	*ʃi	*sa	IDENT-[ant]
☞ a.	$ʃ_x i ʃ_x a$ (ʃ~ʃ corr.)	0	0	1!		1
☹ b.	$s_x i s_x a$ (s~s corr.)	0	0		1!	1
c.	$s_x i ʃ_x a$ (disagr.)		1!	1	1	
d.	$s_x i ʃ_y a$ (no corr.)	1!				

What makes the Kiga pattern more complex is that the harmony is neither value-dominant, nor position controlled. Allowing the tie in (2) to be adjudicated by general markedness constraints like *ʃi or *sa – constraints that would derive the general allophony pattern reported – leads to harmony that adjusts the direction of assimilation to make agreement converge on the less-marked option. At the same time, the rightmost sibilant that controls harmony in (2) is not faithful, so the reason it controls harmony cannot be attributed to positional faithfulness (like the CC·ANCHOR-R constraint of Bennett 2013). The result is a kind of directionality that seems arbitrary, and cannot be explained by having agreement drive harmony as is commonly assumed in the ABC tradition.

Our proposal is that the right-to-left directionality in Kiga is not arbitrary, but rather an emergent effect. A re-examination of data from previous sources (Taylor 1959, 1985) indicates that the s~ʃ alternation is not genuine allophony. In forms where the rightmost sibilant is unfaithful and still controls harmony, the sibilant gets its quality determined by systematic consonant mutations before certain suffixes. Thus, the directionality in these cases can be understood as harmony respecting the output of morpheme-specific mutations. Where stem-final sibilants are faithful, right-to-left harmony can be explained using positional CC·ANCHOR-R.