The typology of Headed Agreement By Correspondence

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This paper proposes the new concept that correspondence relations hold between heads and correspondents (HD-Correspondence) rather than between segments with the same status. It therefore extends Agreement By Correspondence theory (ABC, Walker 2000, 2001; Rose & Walker 2004; Hansson 2010; Bennett, 2013). The structure of its basic factorial typology is discussed in the paper. The theory provides an account of directional harmony without targeted constraints, and predicts under general premises a type of attested harmony where directional and dominant harmony interact. Other advantages not this discussed in this paper are the elimination of some majority rule effects, and the account of known Derived Environment Effects in harmony (e.g. Basque, Slovenian).

Akin to ABC, in Headed Agreement By Correspondence (HABC), surface correspondence is established among segments that share a specific feature. However, in HABC, one of such segments is a consonant head (c-head), and as such, it is the target of specific constraints. Figure (1) illustrates the difference between the two correspondence relations.

(1) HD, CC and IO correspondence

/ʃusu ʃu/   /ʃusuʃu/
 | | | | | |
[ʃusu⌷ʃ⌷u]   [ʃusuʃu]

    a. HD-Correspondence   b. original CC-Correspondence

For the factorial typology, GEN is defined as follows. For the input, it generates all combinations of two segments /s/, /ʃ/ and /t/. The first two segments /s, ʃ/ represent the segments with the correspondence feature [+sib], but with a different value of the harmonizing feature [ant]. For example, a possible input is /s…t/.

Each segment in the input can be mapped to [s], [ʃ] or [t]. Only 1 to 1 I/O mappings are generated (no epenthesis, deletion, splitting or coalescence), and the order of the segments is maintained (no metathesis). Since only two segments can appear in the output, there are only two possibilities in terms of correspondence: either the two segments correspond, or they do not. Correspondence is indicated by using a shared index $_{x…x}$ if the segments correspond, or $_{x…y}$ if they do not. For example, a possible candidate with the sibilants in correspondence is: /s…ʃ/ → [ʃ$_x$…ʃ$_x$].

CON consists of seven constraints, informally defined in (2). In addition to the three faithfulness constraints Ident-IO(+sib), Ident-IO(-ant) and Ident-IO(+ant), CON includes four HD-Correspondence constraints. Corr-HD(+sib) and Ident-HD(ant) are an adaptation of Corr and Ident-CC/VV constraints in ABC. The two constraints on c-heads are original. Notice that the Ident-IO constraints that refer to the harmonizing feature are in the fixed ranking Ident-IO(-ant) ≫ Ident-IO(+ant) to simplify the typology and to reflect an empirical generalization not discussed in this paper.

(2) CON$_{C-Hea}$

Corr-HD(+sib): "One violation for each [+sib] segment that does not correspond to a [+sib] segment "
Ident-HD(ant): "One violation for each segment in HD-correspondence that have a different feature value for the feature [anterior] from its head"
Align(c-head, R): "For each c-head H, assign a violation for each segment D in correspondence with H which is between H and the right edge of the prosodic word" *H…D}$_ω$
Ident-IO(c-head): "One violation for each unfaithful feature mapping of a c-head segment"

The support for the typology includes the two disharmonic inputs /ʃasa/ and /saʃa/. The nine languages in (3) are generated. In addition to the expected dominant-recessive, directional, dissimilation and faithful languages, the typology also includes a previously unreported – but attested (e.g. Pengo, Kera) - type of language, which I call dominant-directional. In dominant-directional harmony, disharmonic roots

harmonize only when the rightmost segment in the correspondence domain has the dominant feature value. Another language is predicted that is a combination of the dissimilation type and the dominant-directional one. In this grammar, disharmonic roots harmonize when the rightmost segment in the correspondence domain is marked, otherwise disharmonic roots dissimilate.

Inputs →	ʃasa	saʃa	Language description	Possibly attested in...
Dom.Hright	$(ʃ)_x aʃ_x a$	$ʃ_x a(ʃ)_x a$	**Dominant harmony.**	Malto, Basque (Moroccan Arabic)
Dom.Hfaith	$ʃ_x a(ʃ)_x a$	$ʃ_x a(ʃ)_x a$	Harmonize to the marked segment	
Pure Dir	$s_x a(s)_x a$	$ʃ_x a(ʃ)_x a$	**Direction harmony.** Harmonize to the rightmost segment	Tsilhqot'in, Chumash, Saisiyat, Thao
Dom-Dir.noCor	$ʃ_x as_y a$	$ʃ_x a(ʃ)_x a$	**Dominant-Directional harmony.**	Ngizim, Pengo, Kera
Dom-Dir.Cor	$ʃ_x a(s)_x a$	$ʃ_x a(ʃ)_x a$	Harm. only if rightmost segment is dominant	
Diss-Dir	$ʃ_x at_y a\ t_x as_y a$	$ʃ_x a(ʃ)_x a$	**Dominant-Directional dissimilation.** If rightmost marked harmony, diss. otherwise	(Javanese)/unattested?
Diss.	$ʃ_x at_y a,\ t_x as_y a$	$ʃ_x at_y,\ t_x as_y a$	**Dissimilation** Dissimilation everywhere	Chol
Faith.noCor	$ʃ_x as_y a$	$s_x aʃ_y a$	**Faithful** No harmony/dissimilation	Lgs without harmony
Faith.Cor	$ʃ_x a(s)_x a$	$s_x a(ʃ)_x a$		

Structurally, the typology is similar to the typology of ABC. Four constraint classes (Alber and Prince, ms.) used to describe its structure are listed below. The typology was calculated using OTWorkplace 71.

- **F** = {f.+ant, f.-ant} **-** Ident-IO constraints that refer to the harmonizing feature
- **Agr** = {corr-sib, m.HD, f-sib} **-** Constraints that conspire to give agreement
- **HPos** = {Al, f.HD} - Constraints that refer to c-heads
- **U** = {**Agr**, **F**}- Non-c-head constraints

The first split partitions the typology into harmonic and non-harmonic languages based on the ranking of the dominated constraint in the classes U and F (**USub(ordinate)** <> **FSub(ordinate)**). The dissimilation and the faithful languages belong to the latter group, while the rest of the languages have at least one harmonic output. Harmonic languages are divided into dominant and directional by **USub** <> **HPSub**.

Another property splits the typology into symmetric (pure directional only), and non-symmetric grammars, depending on the treatment of the two disharmonic inputs (**FDom** <> **AgrSub**). Non-symmetric languages have at least one disharmonic input wherein harmony is not achieved. These languages are distinguished on the treatment of this input, which can be mapped to an output that is faithful with correspondence, faithful without correspondence (as in ABC), or dissimilatory when f.-sib is dominated.

References: Bennett, W. (2013), 'Dissimilation, consonant harmony, and surface correspondence', PhD thesis, Rutgers, The State University of New Jersey ∘ Hansson, G, O. (2010). Consonant Harmony: Long-Distance Interaction in Phonology. Berkeley, CA: University of California Press. ∘ Alber, B. & Prince, A. ms., 'Typologies' ∘ Rose, S. & Walker, R. (2004), 'A Typology of Consonant Agreement as Correspondence', Language 80(3), 475—531.