

Identity and consonant correspondence

Workshop on Replicative processes

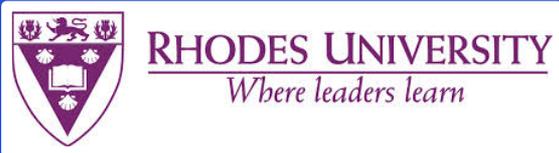
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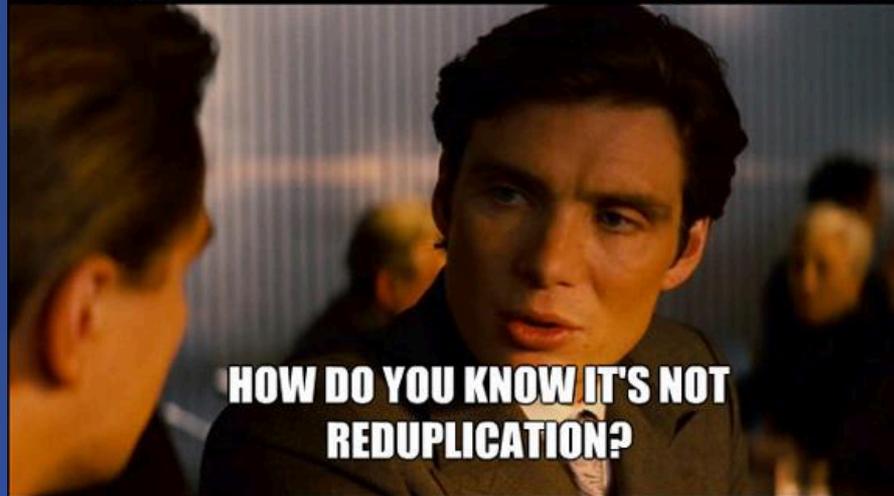
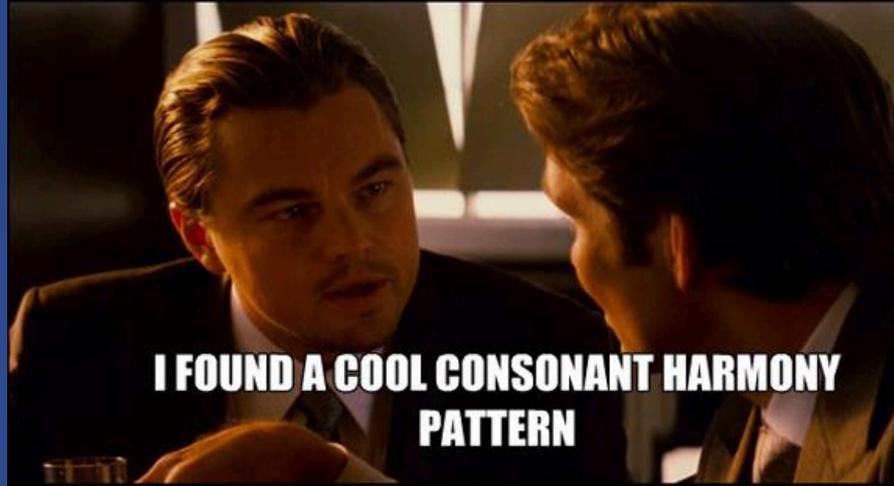
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Wm. G. Bennett

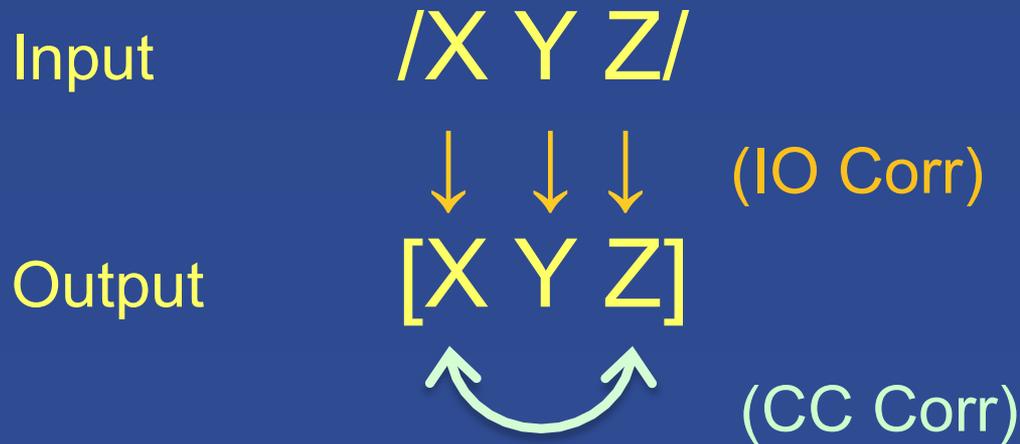
Rhodes University

w.bennett@ru.ac.za





Background



- A flurry of recent work draws on the theory of Agreement By Correspondence (ABC)
 - Long-distance consonant agreement (Walker 2000; Rose & Walker 2004; Hansson 2001/2010)
 - Vowel harmony (Walker 2009, 2011; Rhomeux 2012, Lionnet 2014)
 - Tonal patterns (Shih 2012, Inkelas & Shih 2014)
 - Dissimilation (Bennett 2015, Roberts 2011, Inkelas & Shih 2014) (ergo ‘ABCD’)

A Question

- What is the relationship between ABCD(E)s and re(du)plication?
 - Between the theoretical machinery involved
 - Between the empirical phenomena they target
- Intuitive bases for a connection abound
- Bigger-picture question: do all replicative patterns have a unified explanation?
 - Today's comparison: two kinds of replication, both at PF
 - If there's a unified theory, then ABC should on some level be the same as reduplication

Structure of the talk

- §1 Background on ABC(D) theory
- §2 A quick example from Sundanese
- §3 $ABCD \leftrightarrow RED$: similarities
- §4 $ABCD \not\leftrightarrow RED$: differences
- §5 Summary & conclusions

- Preview of conclusions: there's some kind of connection, but it's not clear that these are really the same mechanism

Laying out the theory

ABC(D), defined

An overview of ABCD

- ABCD consists of 3 essential pieces
 1. Some Correspondence Relation in the output
 2. CORR constraints: ‘if similar → then correspond’
 3. CC-Limiter constraints: ‘if correspond → then’
 - e.g. CC-IDENT: ‘if correspond → then agree for [F]’

- Different implementations differ in some details of the form of these 3 pieces
 - Formulation I’ll presume today is Bennett (2015), which is based heavily on Rose & Walker (2004)
 - Aside: formulation assumed for B-R theory is roughly McCarthy & Prince (1993, 1994, 1995, etc.)

The Correspondence Relation

- Equivalence relation over surface consonants
 - Consonants are partitioned into classes
 - Members of the same class are ‘in correspondence with’ each other
- Example from Sundanese: c=ar=uriga ‘suspicious (pl.)’

Surface form: ca.ru.ri.ga

Consonants:

c	r	r	g
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Partitions: {1} {2} {3}

CORR constraints

- CORR constraint schema: CORR-D-[αF]
 - ‘if two [αF] consonants are in the same D, then they correspond’
 - Takes two arguments: a domain, and a feature specification
 - Ex: CORR-Stem-[-voi, -cont]

- These connect the SCorr relation to similarity
 - Assign violations *to* pairs of similar output Cs (shared features)
 - Assign violations *for* being similar and not in the same partition

- Satisfiable in two ways:

■ Similarity <i>and</i> correspondence	<u>CORR-[-voi, -cont]</u> ✓ [t...p], $\mathcal{R}:\{t\ p\}$
■ Dissimilarity, with or w/o correspondence	✓ [t...w], $\mathcal{R}:\{t\}\{w\}$ ✓ [t...w], $\mathcal{R}:\{t\ w\}$

Limits on correspondence

- CORR constraints alone cannot affect I-O mappings unless there are further strings attached
- CC-Limiter constraints attach those restrictions
 - Form: if correspond \rightarrow then **something** (else, *)
 - Assign violations to pairs of corresponding Cs
 - Assign violations for not meeting some further requirement (set as the content of individual constraints)
- Most notable in the literature: CC-IDENT(F)
- Others can be structural in nature
 - CC-EDGE-(D): no correspondence across (D)omain edge

An aside on generality

- This formalization of ABC is specific to consonants, but the general idea needn't be so narrow
- A not-so-crazy idea: morphological agreement, conditioned by shared syntactic features?
- Ex: Zulu semantic gender agreement? (Doke 1937)

▪ inkomazi	en-de-kazi		injakazi	e-bomvu-kazi
9.cow.fem	Cl9-tall-fem		9.dog.fem	Cl9-red-fem
‘a tall female cow’			‘a red female dog’	
- Sketch of an ABCD-style analysis:
 - spellout of ⟨-(k)azi⟩ introduces a diacritic feature [female]
 - N & A undergo regular agreement; they share all φ values
 - Corresp. driven by shared φ → agreement for [female]

ABC in action

An example: Sundanese

Sundanese: the facts

- Gnztñ: complex alternations with pl. infix /ar/
 - r → l assimilation after l (l=ar=... → l=al=...)
 - r → l dissimilation before r (C=ar=...r → C=al=...r)
 - L-assimilation only in CVC; R-dissimilation fails in CVC
- Data: (mostly Cohn 1992)

■ k=ar=usut	‘messy’	(affix is /ar/)
■ l=al=əga	‘wide’	(L-assimilation)
■ ŋ=al=umbara	‘go abroad’	(R-dissimilation)
h=al=ormat	‘respect’	
■ c=ar=uriga	‘suspicious’	(Dissimilation blocked
r=ar=ahit	‘wounded’	btw. adjacent onsets)

↑ Dissimilation fails where it bleeds assimilation

Sundanese: ABCD interpretation

- Correspondence is required for liquids, and rhotics
- Correspondence is only allowed between onsets of adjacent syllables
 - Locality condition: adjacent syllables
 - Structural parallelism: only onset-to-onset
- L-assimilation: agreement between liquids that correspond
- R-dissimilation: where two [r]s aren't allowed to correspond, one stops being an [r]

Sundanese: ranking for assim.

CC-IDENT(lateral)

CORR-Stem-[Liquid]

IDENT(lateral)

Not depicted: structural limits on correspondence

Input: l=ar=itik Output: l=a.l=i.tik	CC-IDENT (lateral)	CORR-Stem- [Liquid]	IDENT (lateral)
☞ $l_1=a.l_1=i.tik$ $\mathcal{R}:\{l\ l\}\{t\}\{k\}$	0	0	1
~ $l_1=a.r_1=i.tik$ $\mathcal{R}:\{l\ r\}\{t\}\{k\}$	W (0~1!)		L (1~0)
~ $l_1=a.r_2=i.tik$ $\mathcal{R}:\{\emptyset\}\{r\}\{t\}\{k\}$		W (0~1!)	

Sundanese: dissimilation

- An appealing characteristic of ABCD: dissimilation emerges from the same mechanism too
 - CORR constraints only assign violations to similar Cs; If Cs stop being similar, they *don't need to correspond*
 - Dissimilation is another way to satisfy correspondence limits
- The other constraints for Sundanese r-dissim:
 - CORR-stem-[rhotic]: correspondence between [r]s
 - CC-SYLLADJ: correspondents must be syllable-adjacent
 - CC-SROLE: correspondents must be in the same structural position in the syllable
- Effect: two [r]s must correspond. If they can't, then one can't be an [r] → changes to [l].

Sundanese recap

- Complex pattern: r~l dissimilation *and* assimilation
- ABC treatment of the assimilation:
Cs that are similar in one respect (liquidity),
have to agree for something else (laterality),
to satisfy a limit on correspondence
- ABC+D treatment of dissimilation:
Cs that are similar in some respect (rhoticity),
lose that similarity, if they can't satisfy limits on
correspondence

Why ABC is deeply connected to reduplication

Similarities to re(du)plication

Other takes on Sundanese

- Rigg (1862:viii): ‘the initial consonants L and R in adjectives are also frequently duplicated to form a plural. This duplicated consonant is then followed by the vowel *a*...’
- Intuition: /ar/ is really a reduplicant, with fixed segmentism (Hansson 2001; Suzuki 1998, 1999)
 - → For Hansson, governed by B-R correspondence, and not the Correspondence of ABC; different properties
- Why *not*?
 - Reduplicants *can* have fixed segments (Alderete et al. 1999). Why couldn’t *all* of the segments happen to be fixed?
 - Staroverov (2014): C-epenthesis happens by splitting Vs, sometimes in entirely unfaithful ways.
Ex. Washo: /l-a:du-a/ → [la:duja] ‘in my hand’

Formal structure parallels

- The C of ABCD has B-R correspondence as its closest relative
 - Both hold over segments in the same output form
- Segments at both ‘ends’ of the correspondence linkage are changeable
 - ABCD → harmony can go right-to-left, or left-to-right
 - BR → over-application, back-copying, etc.
 - cf IO: Input-Output mismatches aren’t fixable by changing the *input* to match a desired output
- Also, recurring constraint schemas:
 - Rose & Walker (2004): SROLE-CC, IDENT-CC
 - McCarthy & Prince (1993): STROLE, BR-IDENT

Reductio ad replicatio

- When mechanisms of ABCD are simplified, it becomes more narrowly replicative
- Gallagher & Coon (2009): ABC for total identity
 - Proposal: corresp-esque ‘linking’, and an IDENTITY constr.
 - Consequence: collapses all CC-IDENT constraints together
 - Effect: ABC-type harmony only produces duplicated Cs
- McCarthy (2010): ‘ABC without CORR constraints’
 - Proposal: instead of CORR-[α F], just one MAX-CC constraint
 - Consequence: collapses all CORR constraints together
 - Effect: Correspondence is opportunistic copying
cf. ‘aggressive reduplication’ (Zuraw 2002)

Empirical overlap: harmony?

- Harmony not always clearly distinguishable from reduplication - especially on finer specifics
- Ex: OshiNdonga nasal harmony (R&W 2004, Fivaz 1986)
 - Gnztn: /l/ → [n] after nasals in preceding syllable
 - pep-el-a ‘blow towards’ (appl. is /-Vl-/)
 - kam-en-a ‘press for’ (harmony; *kam-el-a)
 - nik-il-a ‘season for’ (distance limited)
- Reduplication allows longer-distance harmony?
 - t^hit-ulul-a ‘unblock’ (reversive -VlVl-)
 - kun-unun-a ‘sow seeds again’ (long-distance harm?)

Empirical overlap: dissimilation?

- How does dissimilation relate to reduplication?
- Sundanese: r-dissimilation fails in reduplication
 - Many lexical exceptions are pseudo-reduplicated
 - Ex: rara ‘braid’, ragrag ‘fall’, rorompok ‘house’ (Cohn 1992)
- Sanskrit: alternations only in reduplications
 - Grassman’s Law: static restriction, only one aspirate per root
 - Alternations observed only in reduplication (Anderson 1970)
- Chol: Identity Effects (MacEachern 1999; Gallagher & Coon 2009)
 - ‘Identical-or-else-dissimilated’ (Suzuki 1999)
 - Only one ejective per root – *unless* they are identical

Empirical overlap: iconicity?

- Reduplication is commonly tied with certain iconic grammatical functions
 - plurality, distributivity
 - abundance, iterativity
- Similar iconicity is reported for some cases of consonant harmony
- Wiyot diminutives and augmentatives (Teeter 1959)
 - *tawî·pa?lił* ‘rope’
 - *tʃawî·pa?roł-atʃk* ‘heavy cable’ (t → tʃ in aug.)
 - *tsawî·pa?roł-ots* ‘twine’ (t → ts in dim.)

Reasons to think ABCD is fundamentally not actually replicative

Dissimilarities

Formal differences: \mathcal{R} elation

- B-R correspondence: *from* Base to RED
 - parallels I-O correspondence: status of something as part of 'Base' is not changeable (e.g. no deciding to copy less of base)
 - If C-C correspondents are all on the same level of representation, what is the 'to'/'from'?
- 1-to-1-ness: cardinality of correspondent sets
 - B-R correspondence is typically 1-to-1, or based thereon
 - C-C correspondence can (and must) have groups of >2 correspondents (e.g. Chumash $\text{ʃapit}^{\text{h}}\text{olufwaʃ}$)
- Number of \mathcal{R} elations?
 - BR: distinct relations for each reduplicant
 - CC: not so clear that multiple relations are necessary

Formal differences: constraints

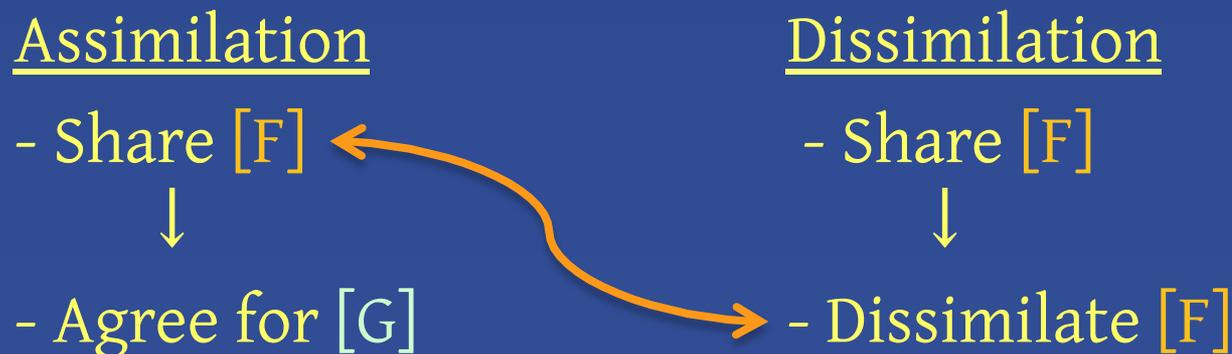
- Role of quantity is different
 - BR-MAX & BR-DEP are well-established
 - CC-DEP: ‘if Cs correspond, then no insertion’ (???)
- Doman edge effects
 - Bennett (2015) proposes a family of CC-EDGE constraints
 - BR-EDGE constraints?
- Features referred to by __-IDENT-[F]?
 - Not all features can be shared by consonant harmony
 - Does this parallel the typology of potential B-R (dis)agreements?
 - Do CC-IDENT and BR-IDENT constraints pick out the same set of [F]s?

Empirical scope: disreplication?

- ABCD produces assimilation, but also dissimilation
- Is there an analogue for the BR relationship?
- Hapology? (attested; intuitively mirrors redup.)
 - Not obviously derivable from BR constraints without making them refer to more than B & R
 - If BR constraints *do* refer to similar Cs outside of REDs, then they start to approximate ABCD (cf. Zuraw 2002)
- ‘Imbrication’ in Xhosa:
 - libal+ile → -libele ‘forgot (perf.)’
 - Coalescence of two /l/s; explainable from ABCD?

A typological mismatch

- **Mismatch:** ABCD predicts an unintuitive relationship between assimilation & dissimilation



- The theory doesn't predict a mirror-image parallelism
- This seems to be closer to the typological reality than a mirror-image null hypothesis

And conclusions?

Summary

Recap

- Deep parallels between ABCD and reduplication
- Deep differences between ABCD and reduplication
- Some are formalism-specific
- Some aren't – at least not obviously
- Some of each might follow from differences in level of representation
 - BR and IO are mappings between different levels
 - CC correspondence is all within one level

Conclusions

- Is ABCD fundamentally a sub-type of re(du)plication?
 - ABC: sort of looks like it
 - D: not so much
- The D is a good result!
 - but it has no obvious analogue in reduplication
- Empirical conclusions await more detailed evidence on the range of possible ABCDEs – and the typology of replication in phonology

Thank you!