Downstep in Dagaare

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1. Outline

(1)   Downstep ($=$ ꜜH) can arise from a variety of sources (Leben 2018).

(2)   In Dagaare (Gur/Mabia, NW Ghana, Kennedy 1966, Bendor-Samuel 1971, Hall 1977, Naden 1989, Bodomo 1997), downstep has two sources:
  (a)   Floating L underlyingly specified on a root or a suffix
       (see, e.g., Pulleyblank 1986: 34 for Tiv)
  (b)   The last H at the edge of a phonological word is downstepped
       (see, e.g., Childs 1995: 48 for Kisi)

(3)   Morphemes are underlyingly H, L, or toneless (Anttila and Bodomo 2000). On the surface there is a three-way contrast after a H tone:

bíí-rí	H-H	'child-PL'
zú-ꜜrí	H-ꜜH	'head-PL'
wóg-rì	H-L	'tall-PL'

(4)   Constraint on the realization of downstep:
  (a)   Only one downstep per phonological word is allowed.
  (b)   If more downsteps would arise, the morphologically inner downstep blocks the morphologically outer downstep.

(5)   We derive these generalizations from phonology-morphology interleaving (Kiparsky 1982, 2000; Mohanan 1986; Pulleyblank 1986).

2. Stem-level tone

(6)   Stem-level processes (see Kenstowicz et al. 1988 for parallels in Moore):

NAME	PROCESS	CONDITIONS
Meeussen's Rule	H H → H L	SG/PL, IMPF, nominalizer
Leftward H Spreading	∅ H → H H	nouns, adjectives
Rightward H Alignment	∅ H → L H	verbs (L = default tone)
Downstep from floating L	H L H → H ꜜH	--

(7)   wir -i   →   wìr -í   'horse-SG'   --

       | | | |

      L H   L H

(8)   yi -ri   →   yí -rì   'house-SG'   Meeussen's Rule

       | | | |

      H H   H L

(9)   pɔg-ɔ   →   pɔ́g-ɔ́   'woman-SG'   Leftward H Spreading

       | \

       H   H

(10) Nouns and verbs are systematically different: Leftward H Spreading applies in nouns, but not in verbs where we have Rightward H alignment:

    tuu-ro   →   túú-ró   'follow-ER'   Leftward H Spreading

                     (noun)

       | \

       H   H

    tuu-ro   →   tùù-ró   'follow-IMPF'   Rightward H Alignment,

                     (verb)   Default L Insertion

       | | |

       H   L H

(11)   Downstep can originate from either the root or the suffix:

zu-ri → zu- ˈri   'head-PL'   Downstep,

Floating L from the root

HL H   H L H   Cf. *zû* 'head.SG'

sa͎a-ma → sá͎á͎-ˈmá   'stranger-PL'   Downstep,

Floating L from the suffix

H L H   H L H   Cf. *sá͎á͎-nà͎* 'stranger-SG'

(12)   Note the absence of downstep after *sá͎á͎-* 'stranger' in compounds:

à   **sá͎á͎-**   **wóg-**   kpóngì   nǎ   (*sá͎á͎-ˈwóg-)
DEF stranger tall   big   DEM
'that tall big stranger'

3. Word-level tone

(13)   The last H at the right edge of a phonological word is downstepped.
(This rule seems to admit some variability.)

$\varnothing \rightarrow$ (L) / _ H]$_{Word}$ (Gussenhoven 2004: 110-113)

(14)   yí-rì   'house-SG'   yí-ˈfáá   'house-bad'

(15)   yi-fa-a → yí-   ˈfáá]$_{Word}$ 'house-bad-SG'

H   H   H (L) H

(16)   This downstep cannot come from /yi/ or /fa/ bccause
(a)   /yi/ is H since we get *yí-rì* (Meeussen, H-H → H L), not **yí-ˈrì*
(b)   /fa/ 'bad' is underlyingly toneless as is evident from compounds:
à   [bìbìl- **fà-**   wóg]$_{Word}$ nǎ
DEF   child bad   tall.SG   that
'that bad tall child'

(17)   Only a H tone at the right edge of the phonological word-is downstepped:

à   [bìbìl wóg   **kpóng   fíí-lɛ̀**]_{Word} nǎ

DEF kid   tall   big   young-PL   DEM

'those tall big young kids'

(18)   The factitive/focus marker *lá* is downstepped after a H-final verb:

ù   dáá   [**bùrí**   ˈ**lá**]_{Word} à   mírì

3P.SG PAST.2.DAYS   soak.PERF   FACT   DEF   rope

'S/he soaked the rope two or more days ago'

à   dá̰à̰   nǎ   ù   nàng̀   dúg-rɔ̀   [é   ˈ**lá**]_{Word}nʊ̀ɔ́

DEF   pito   REL   3P.SG   REL   brew-IMPF   be   FACT   sweet

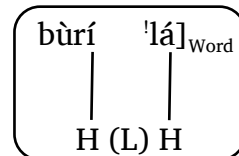'The pito he is brewing is sweet'

(19)   Constraint:

(a)   Multiple downsteps within a word are banned:

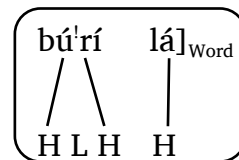*[HˈHˈH]_{Word}

(b)   Downstep on the left blocks downstep on the right.

(20)   <u>Opacity</u>: Stem-level downstep blocks word-level downstep:

(a)   ù   dà   [**bùrí**   ˈ**lá**]_{Word} à   mírì

3P.SG PAST   soak.PERF   FACT   DEF   rope

'He soaked the rope'

(b)   ù   dà   [**búˈrí**   **lá**]_{Word}   à   kʊ̰̀ɔ̰́

3P.SG   PAST   fetch.PERF   FACT   DEF   water

'He fetched the water'

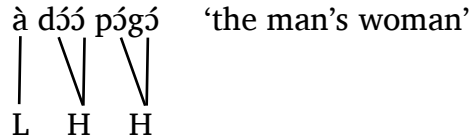

(21)   <u>Opacity</u>: Downstep on an object pronoun blocks downstep on *lá*:

ù   [[bùrí   ˈ**má**]_{Word} **lá**]_{Word}
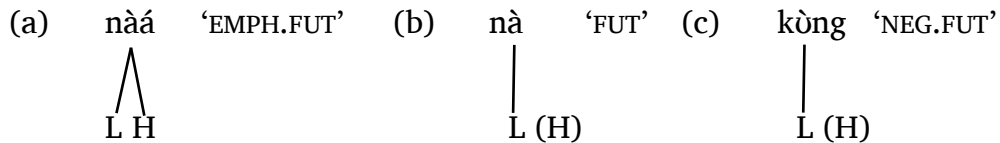
3P.SG   soak.PERF   me   FACT

'He soaked me'

4. Postlexical tone

(22) No postlexical dowstep: H#H sequences across words are pronounced level.

à dɔ́ɔ́ pɔ́gɔ́   'the man's woman'

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|   \/   \/
L   H   H
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(23) Postlexical processes make both stem-level and word-level processes opaque (Kiparsky 2000).

(24) Future prefix particles have a trailing H:

    (a)   nàá   'EMPH.FUT' (b)   nà   'FUT' (c)   kùng 'NEG.FUT'

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      /\                |               |
     L H              L (H)           L (H)
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(25) The toneless /buri/ 'soak' is L after *bá* 'NEG', but H after *kùng* 'NEG.FUT':

    (a)   ò   dà   nànɡ̀ **bá** **bùrì**   à   mírì

            3P.SG PAST ADV   NEG   soak.PERF DEF rope

            'He had not (yet) soaked the rope'

    (b)   ò   dà   nànɡ̀ **kùng** **búrí**   à   mírì

            3P.SG PAST ADV   NEG.FUT soak.PERF DEF   rope

            'He will not (yet) have soaked the rope'

(26) The toneless /gaa/ 'go' is L after *nàá* 'EMPH.FUT', but H *nà* 'FUT':

    (a)   ò   **nàá**   **gàà** lá   (b)   ò   **nà**   **gáá** lá

            3P.SG EMPH.FUT go   FACT   3P.SG FUT   go   FACT

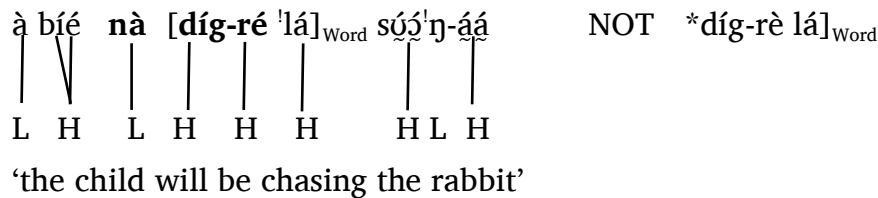   'he will willingly go'   'he will go'

(27) <u>Opacity</u>: No word-final downstep on *lá* because the H H]_{Word} was created postlexically (postlexical phonology counterfeeds word level phonology):

ù nà **gáá lá**]_{Word} NOT *gáá ˈlá]_{Word}

| | | |

L L H H

(28) A toneless verb followed by a H suffix:

dig-re 'chase-IMPF'

|

H
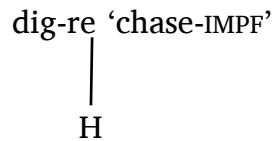
(29) <u>Opacity</u>: H from *nà* (LH) 'FUT' creates a H-H sequence across a stem-suffix boundary, but Meeussen's Rule (H-H → H-L) does not apply (postlexical phonology counterfeeds stem level phonology).

à bíé **nà** [**díg-ré** ˈlá]_{Word} súɔ́ˈŋ-áá NOT *díg-rè lá]_{Word}

L H   L H   H H   H L H

'the child will be chasing the rabbit'

(30) The downstep in *díg-ré ˈlá* is correctly predicted: the stem-level *-ré* triggers word-level downstep (stem-level phonology feeds word-level phonology).

(31) <u>Opacity</u>: No downstep on *lá* 'FACT' after a focused subject, presumably because *lá* is cliticized at the phrasal level (postlexical phonology counterfeeds word-level phonology).

únɔ́	**lá**	là	wà
3P.SG.EMPH	FACT	REP	come

'It is he who has come again'
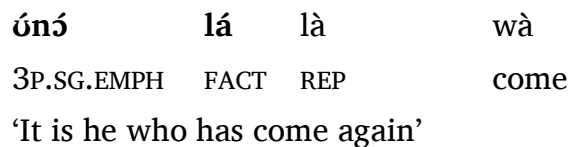
5. Summary

(32)   Dagaare downstep has two sources:
   (a)   <u>Morphemes</u>: Floating L on roots/suffixes
   (b)   <u>Prosody</u>: The right edge of a phonological word

(33)   Evidence for level ordering:
   (a)   At the <u>stem</u> level H-H dissimilates (H-H → H-L).
   (b)   At the <u>word</u> level H-H survives with downstep (H H → H ꜜH).
   (c)   At the <u>postlexical</u> level H-H survives intact.

(34)   Evidence for cyclicity:
   (a)   Only one downstep per phonological word is allowed.
   (b)   If more would arise, inner downstep blocks outer downstep.

Acknowledgements

References

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