Metrical structure & its rhythmical interpretation

Meter vs. Rhythm

The model differentiates between…

- Meter
  - abstract phonological representation
  - derived from morpho-syntactic information
- Rhythm
  - concrete phonetic realization
  - surface-related phenomenon
  - interprets the abstract metrical structure

Metrical structure

Metrical structure is presented in a relational model which…

- compares the relative strength of metrical domains rather than of single marks
- leads to an even distribution of metrical marks

(1)

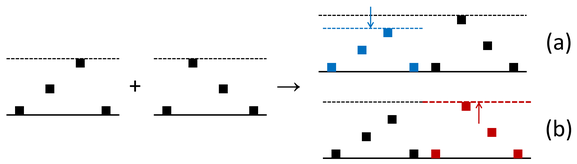
Upper bounds are defined by the highest mark(s). Lower bounds are defined by the lowest mark(s).

(2)

Metrical subordination:

- one domain is lowered / raised with respect to the other domain

(3)



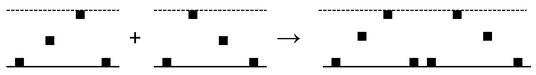
The final structure is independent of the perspective. The results are identical for…

- lowering domain A relative to domain B → structure (a)
- raising domain B relative to domain A → structure (b)

Metrical coordination:

- no domain is lowered / raised with respect to the other one

(4)

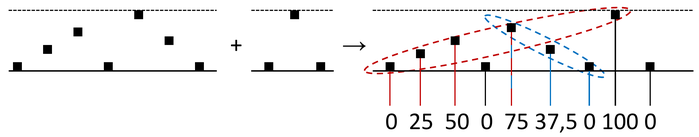


Metrical values

The metrical values are calculated relative to the marks in the same path of embedding:

y(x): $y_z = ((w/(x-1))\cdot(z-1))$ — w: reference value
x; z ϵ N — x: number of marks
0 < z ≤ x — y: value of relative height
0 < w ≤ 100 — z: label of marks

(5)



x = 5; w = 100 → y(5): $y_1 = 0$, $y_2 = 25$, $y_3 = 50$, $y_4 = 75$, $y_5 = 100$

x = 3; w = 75 → y(3): $y_1 = 0$, $y_2 = 37{,}5$, $y_3 = 75$

Single marks are underspecified for their relative height:

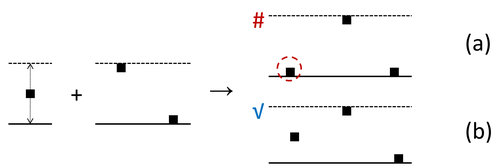
x = 1; w = 100 → y(1): $y_1 = ((100/(1-1))\cdot(1-1)) = ?$

Preliminary problems

Three problems remain to be solved:

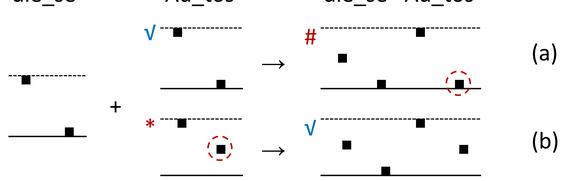
- monosyllabic words have only one single mark, which we cannot define a relative value for
- single marks have to be lowered in a non-optimal way to reach the correct structure
- in some examples, the resulting structure seems to be based on an illicit input

(6) ein Tem_pel ein Tem_pel



→ structure (6a): optimal distribution – wrong output
→ structure (6b): non-optimal distribution – right output

(7) die_se Au_tos die_se Au_tos



→ structure (7a): permitted input – wrong output
→ structure (7b): illicit input – right output

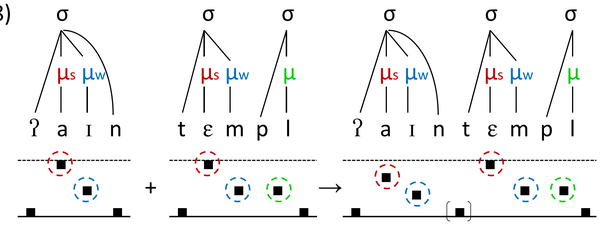
Solution

The preliminary problems can be solved by taking two factors into consideration:

- sub-syllabic structure which differentiates…
  - non-reduced syllables (with full vowels)
  - reduced syllables (with schwa or consonantal peak)
- neutral reference marks, which…
  - function as target points
  - reflect constituent boundaries

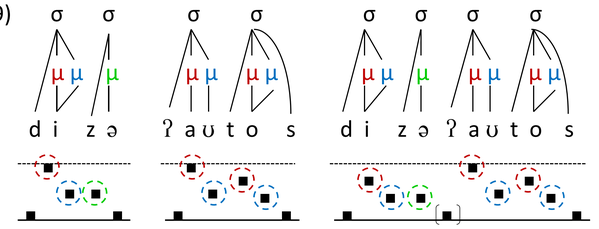
Adjacent neutral reference marks combine.

(8)



→ optimal distribution – right output
→ no underspecified single marks

(9)

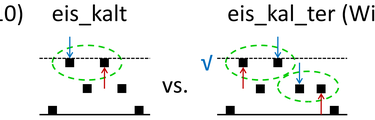


→ permitted input – right output

Rhythmical interpretation

Rhythmical alternation affects marks of the same relative metrical strength if no higher marks intervene:

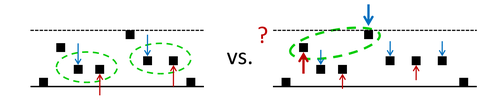
(10) eis_kalt eis_kal_ter (Winter)



→ initial stress possible

Otherwise, changes of relative metrical values by rhythmical processes are marked:

(11) ü_ber_trie_ben ü_ber_trie_be_ne (Hoffnung)



→ initial stress marked

Questions? Comments?
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