

## HQSYN16 - Task #4251

Task # 3678 (New): RA3c - Continuity of prosodic patterns

Task # 4237 (New): Continuity of F0 pattern

Task # 4250 (New): F0 join cost

### Propose F0 weighting for F0 continuity in phones

21.09.2017 08:51 - Matoušek Jindřich

<b>Status:</b>	Closed	<b>Start date:</b>	21.09.2017
<b>Priority:</b>	Normal	<b>Due date:</b>	01.12.2017
<b>Assignee:</b>	Tihelka Dan	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	RA3: Phonetically justified parameters for speech synthesis		

#### Description

Propose [F0 weighting](#) F0 continuity in phones.

#### The idea:

F0 continuity is important only when vowels (or also other sonorants?) are concatenated. For other phones, F0 continuity is not so important or even can be ignored.

Propose a phone-level weighting scheme (the bigger the weight, the more important the F0 continuity is).

#### History

##### #1 - 22.09.2017 21:32 - Skarnitzl Radek

- Status changed from New to Assigned

##### #2 - 06.11.2017 19:32 - Skarnitzl Radek

- Due date changed from 31.10.2017 to 01.12.2017

- % Done changed from 0 to 20

We are preparing stimuli for a controlled experiment. VCV pseudowords have been monotonized in terms of their F0 and, subsequently, F0 is being step-wise modified in the middle of the target consonant to emulate a sudden F0 shift in the point of concatenation.

##### #3 - 15.10.2018 09:04 - Skarnitzl Radek

- File *f0.png* added

- Status changed from Assigned to Resolved

- % Done changed from 20 to 100

The results of the perceptual experiment clearly show that the current practice of including F0 in all voiced sounds as a criterion in calculating the concatenation cost is not necessary. The study is prepared for submission into a journal (and should still be published this year); the results are summarized as follows:

- 1) The **direction of F0 change needs to be taken into account**; in the attached figure, the discontinuity in the two F0 courses is objectively the same, but the first one will not be audible, while the second will be disruptive.
- 2) F0 can be ignored within obstruent consonants (i.e., plosives, fricatives, affricates); only calculate F0 when concatenating diphones pertaining to **sonorants** (nasals, approximants).
- 3) F0 discontinuities (in sonorants) of **1 semitone or less** may be ignored; in the test, we had discontinuities of 1 or 5 ST, the former were never perceived as disruptive. Future experiments may focus on where between 1 and 5 ST the boundary lies.

##### #4 - 17.01.2019 15:58 - Matoušek Jindřich

- Assignee changed from Skarnitzl Radek to Tihelka Dan

##### #5 - 20.09.2021 21:48 - Tihelka Dan

- Status changed from Resolved to Closed

Outdated...

**Files**

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f0.png	64.6 KB	15.10.2018	Skarnitzl Radek
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