

Phonetik & Phonologie 9 (P&P9)

Zürich, 11.-12.10.2013



Universität
Zürich^{UZH}

Phonetisches Laboratorium

Book of Abstracts

Ort: Universität Zürich, Rämistrasse 71, Stock G, Raum 217

Tagungsbüro: Freitag, 11.10.2013: 7:45–8:30, 10:00–10:30 & Samstag: 8:00–8:30,

Tisch vor dem Konferenzraum

Kontakt: pundp9@gmail.com

Organisation: Adrian Leemann, Marie-José Kolly, Stephan Schmid, Volker Dellwo,
Camilla Bernardasci, Kostis Dimos, Daniel Friedrichs, Lei He, Yshai Kalmanovitch,
Karnthida Kerdpol



FONDS NATIONAL SUISSE
SCHWEIZERISCHER NATIONALFONDS
FONDO NAZIONALE SVIZZERO
SWISS NATIONAL SCIENCE FOUNDATION



Universität
Zürich^{UZH}
Hochschulstiftung



PETER LANG
INTERNATIONALER VERLAG DER WISSENSCHAFTEN



Zürcher Universitätsverein
Ehemalige und Freunde der UZH

Inhaltsverzeichnis

(Alphabetisch geordnet nach den Nachnamen der Erstautoren)

Mufleh Alqahtani: Sonority and Epenthesis in Najdi Arabic: an OT perspective	1
Meryem Arıman, Vanya Dimitrova, Jeanin Jügler, and Nicola Wagner: Werden bestimmte Artikel im Deutschen nach trochäischem Muster gruppiert? Untersuchung anhand eines Sprachproduktionsexperiments.....	2
Petra Augurzky, Fabian Tomaschek, and Arndt Riester: Modelling German adjunct/argument phrases ..	4
Dinah Baer-Henney, Frank Kügler, and Ruben van de Vijver: Learning irregular alternations: How language-specific and universal factors interact	5
Felipe Venâncio Barbosa, Janice Gonçalves Temoteo: What creates the location? Study on the arm and forearm in the hold of lexical items of Brazilian Sign Language.....	7
Stefan Baumann: Untrained listeners' judgements of prosodic prominence	8
Ariadna Benet, Carolin Butke, Laura Morgenthaler, Rafèu Sichel-Bazin, and Trudel Meisenburg: Methods for the improvement of Spanish sounds produced by German L2 speakers	9
Pia Bergmann: Komplexe Wörter in der Spontansprache: Morphologie und phonetische Realisierung von Zweitgliedern	10
Karen Bohn, Alexander Werth: Segmentale und prosodische Kontraste in der neuronalen Sprachverarbeitung am Beispiel mittelfränkischer Tonakzentdialekte	12
Ocke-Schwen Bohn: Two universal biases in adult and infant learners' vowel perception	13
Julia Brandstätter, Sylvia Moosmüller: Vokaloppositionen in der österreichischen Standardsprache. Neutralisierung hoher Vokale durch StandardsprecherInnen in Wien.	14
Bettina Braun and Muna Pohl: Is high pitch a better cue for speech segmentation in German infants than metrical prominence?	16
Tim Bressmann: Pseudo-dreidimensionale ultrasonografische Darstellung der Zungenform beim Sprechen	18
Jana Brunner, Christian Geng, Adamantios Gafos: Coarticulatory influences on the C-center effect	19
Nadja Bucheli, Manuela Guntern: Salienz lautlicher Merkmale schweizerdeutscher Dialekte und Standardsprache	20
Carolin Butke, Rafèu Sichel-Bazin, Ariadna Benet, Laura Morgenthaler, Trudel Meisenburg: Linksdislozierte und gedoppelte Subjekte im gesprochenen Französisch.....	21
Wen-Hsuan Chiao: Taiwanese Tonal Variation in Contexts	22
Conceição Cunha, Julia Brandstätter: The implementation of the tense - lax vowel contrast in two standard varieties of German	23
Volker Dellwo, Adrian Leemann, Marie-José Kolly: Can speakers be identified auditorily based on suprasegmental temporal characteristics?	25
Kostis Dimos, Volker Dellwo, Leopold Dick: The Phonetics of Composed Theater	27
Christoph Draxler: Percy – Online Perceptionsexperimente: Kurzbeschreibung des Systems und eine Anwendung in der Dialektologie	29
Daniel Duran: The strength of perceptual magnets determined by different neighbourhoods	31
Hanna Feiser: Evaluierung von mittlerer Grundfrequenz und Vokalformanten bei verwandten Sprechern .	32
Daniel Friedrichs, Volker Dellwo, Heidy Suter, Dieter Maurer: Acoustic analysis of vowel sounds including extensive variation of fundamental frequency.....	34
Susanne Fuchs, Anna Sapronova, Erika Schulz: Zur Rolle der Schneidezähne bei der Produktion von Obstruenten	35
Susanne Genzel, Frank Kügler: Perception of sentence type in Akan	36

Acoustic analysis of vowel sounds including extensive variation of fundamental frequency

Daniel Friedrichs¹, Volker Dellwo¹, Heidy Suter², Dieter Maurer²

¹*Phonetics Laboratory, University of Zurich, Switzerland*

{daniel.friedrichs|volker.dellwo}@uzh.ch

²*Institute for the Performing Arts and Film, Zurich University of the Arts, Switzerland*

{heidy.suter|dieter.maurer}@zhdk.ch

Formant frequency analysis represents the actual standard for determining speech-specific acoustic characteristics of vowel sounds. Given sounds, which are produced in isolation or extracted from speech context (exclusion of transitions) and which display quasi-constant spectral characteristics, according to source-filter theory, vowel quality relates to vowel-specific formant patterns.

With regard to vowel sounds of single speakers, in general, existing formant statistics document formant patterns for the level of fundamental frequency (F0) of normal speech, and formant patterns (F1, F2, ..., Fi) on different levels of F0 of the sounds only relate to the comparison of different speaker groups (children, women, men). Such approach bases on the assumption, that F0 is a characteristic of the phonation (i.e. the source) and, on the contrary, the formant pattern a result from articulation (i.e., the filter). Hence, with regard to normal speech, no substantial relationship between F0 and formant patterns is expected for vowel sounds of single speakers.

Besides, acoustic characteristics of vowel sounds of single speakers including substantial variation of fundamental frequency have been investigated in the context of singing and acting. In addition, studies on shouting/crying and on vowel synthesis report results of acoustic analysis of sounds including a variation of F0.

However, we take the view that the variation of F0 exceeding one octave does not only concern artistic, interpretive and entertaining utterances, or very specific utterances such as shouting/crying, but also utterances of single speakers in everyday life as a characteristic of normal speech. If strong emotional expressions and shouting/crying are included, this holds true for a variation of up to two octaves or more. With regard to the intelligibility of sounds on higher F0, indications are given in the literature that vowel qualities can be recognized up to a fundamental frequency of 500 Hz or even above, and that formant patterns of sounds of one vowel quality can be F0-dependent. However, these indications must be qualified because of the methodological problems inherent in the acoustic analysis of vowel sounds on higher F0. On this background, the present contribution (1) describes methodological aspects of acoustic analysis of vowel sounds including substantial variation of F0 and (2) illustrates different approaches on the basis of vocalizations of a child, a woman and a man.