



Swe-Clarin research collaborations at the Humanities Lab, Lund University

LUND UNIVERSITY

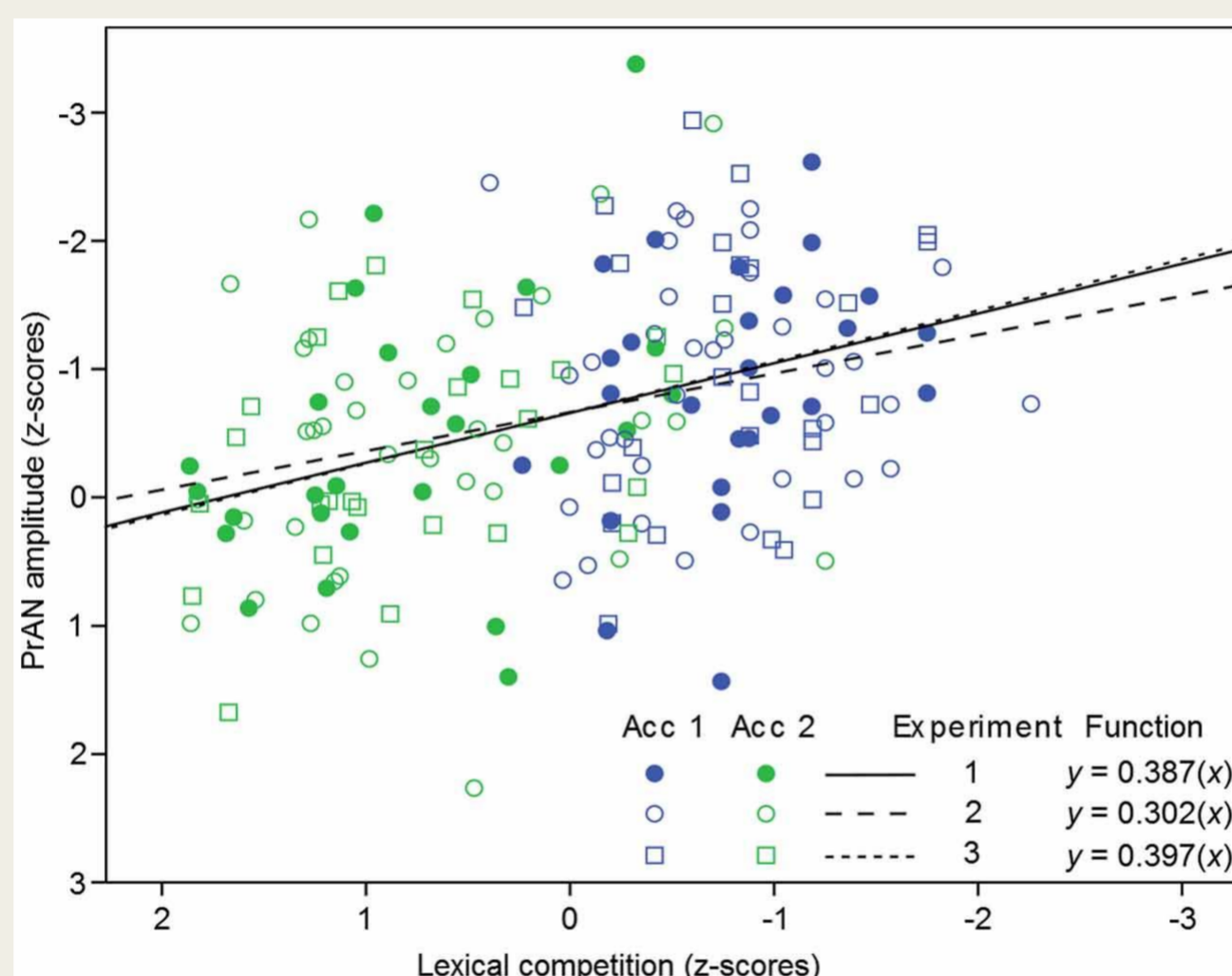
Johan Frid

ERP-lexical competition

- Neurolinguists (Pelle Söderström, Mikael Roll and Merle Horne, LU).
- Investigates a proposed ERP effect, the pre-activation negativity (PrAN).
 - accent 1 has been found to give rise to a slightly left-lateralized increased negativity over frontocentral electrode sites at 136–280 ms as compared to accent 2
 - Hypothesises that this is related to lexical competition
- **Swe-Clarin:** Development of a method for calculation of a lexical competition score.
- Database of word initial fragments (WIFs) and syllables from the Swedish NST lexicon; frequency filtered with word frequencies from the Swedish PAROLE corpus.

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0_a0+ NN SINGLE ACC1 8 boysa båg bål bår bård bås båt båta
0_a0+ NN INITIAL ACC1 9 båken bålen bålena bålet båren båsen båset båter
båtens
0_a0+ NN INITIAL ACC2 83 bågar bågarne båge bågekyttar bågekyttarna
bågekytte bågsåg bålar bålvark bålvarket båsar bårarna bårbararna bårder
bårhus bårhusen bårhuset bårtacke bårtacket båtar båtarna båtarnas
båtbanet båtbyggen båtbygger båtbyggerne båtbyggerens båtbyggerna
båtbyggeri båtbyggnader båtbyggnads båtbyggnads båtfolk båtfolket
båtfärd båtferden båtforare båtforande båtman båtmanerna båtmaner
båtus båtuset båtklubbar båtklubbar båtklubbar båtklubben båtlast
båtlastar båtlast båtmodeller båtmotorer båtmasse båtmassan båtmassor
båtmassa båtmassan båtmassor båtmat båtolycka båtplats båtplatser
båtplatserna båtregistret båtresa båtresan båtressor båtsekt båtsektion
båtsektionen båtstuvor båtstrafik båtstrafiken båtstur båtturen båtturet
båttyp båttypen båttypar båtvarv båtvarvare båtvarvare båtvarvare
  
```



Test at: <https://goo.gl/kDi04J>

- PrAN is sensitive to lexical competition, in particular to the number of continuations which can complete a given word-initial fragment.
- Published in Söderström et al (2016a, b).

Söderström P, Horne M, Frid J and Roll M (2016a) Pre-Activation Negativity (PrAN) in Brain Potentials to Unfolding Words. *Front. Hum. Neurosci.* 10:512.

Söderström, P, Horne, M, Frid, J and Roll, M (2016b) A brain potential signalling linguistic pre-activation?: an analysis of the pre-activation negativity (PrAN). *Annual Meeting of the Society for the Neurobiology of Language.*

MEPAC

- Project run by Anna W Gustafsson (Swedish, LU) and Charlotte Hommerberg (English, Linné).
- Investigates the use of metaphor in the experience of end-of-life care.
- **Swe-Clarin:** Corpus based on blogs by patients, family carers and healthcare professionals.
- Development of a Swedish version of the UCREL semantic analysis system (Lancaster) which will aid the detection of metaphors.
- Swedish model for the TreeTagger POS system
 - Test at: <https://goo.gl/7hk3mk>
- Additional funding from the Crafoord foundation.

MUMOP

- Project on multimodal prominence (Gilbert Ambrazaitis, LU & David House, KTH).
- Interplay of verbal prosody (pitch accents) and visual prosody (head and eyebrow beats).
- Word-based annotation of head and eyebrow movements based in video data.
- **Swe-Clarin:** Development of a system for training a classifier to recognise head movements in video data.



L: Face detection using OpenCV; x-y coordinate of white dot

R: Angular velocity (red) and word intervals (blue) as a function of time

- Train: features of temporal functions.
- Predict: labels (movement/no movement).
- 85% correct (xgboost; baseline 78%)
- Presented at MMSYM 2016 and at the Swe-Clarin inauguration event.

Frid, J, Ambrazaitis, G, Svensson Lundmark, M & House, D (2016). Towards classification of head movements in audiovisual recordings of read news. *MMSYM 2016.*

MDCS

- eSENCE-funded project run by Jonas Björk at the Division of occupational and environmental medicine, LU.
- **Swe-Clarin:** Information extraction from scientific articles. NLP methods to extract information such as the hypothesis, the data set, the statistical method used etc.
- PLOS abstracts -> CoreNLP -> labels -> nbsvm.
- Prototype:

MDCS Text Classification Demo Site

To investigate if diet quality is related to incidence of cardiovascular -LRB- CV -RRB- events .
 The index ranked 17126 participants -LRB- 59 % women -RRB- of the population-based Malmö Diet and Cancer cohort -LRB- Sweden -RRB- on their dietary intakes .
 In multivariate analysis ; the risk reduction was 32 % -LRB- hazard ratio = 0.68 ; 95 % confidence interval : 0.49 -- 0.73 -RRB- in men and 27 % -LRB- hazard ratio = 0.73 ; 95 % confidence interval : 0.59 -- 0.91 -RRB- in women .

aim	exposures	outcomes	study_design	inclusion_criteria	actual_size	severalcohorts	subgroups	follow_up_period	assessment_of_end_points	statistical_methods	results	conclusions
1	1	1	1	1	1	1	1	1	1	1	1	1
-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	1	1	1	1	1	1	1	1	1	1	1

