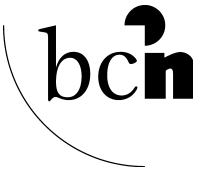
Measuring Dialect Pronunciation Differences using Levenshtein Distance

Wilbert Heeringa

The research has been carried out at the University of Groningen, Faculty of Arts, the Humanities Computing department.



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This thesis is attributed to exactly one author as can be seen on both the cover and the title pages. The author is the one who is responsible for the content. But it should be emphasized that many people contributed to the coming about of this thesis. I would like to mention them.

First of all, I thank my promotor, John Nerbonne. More than five years ago, he encouraged me to work on the dialectometry project, and during the project he gave invaluable support. Without his support this thesis would never have been published.

Probably just the pictures in this thesis will catch the eye of the reader. While I implemented programs for calculating distances between language varieties and for clustering them, Peter Kleiweg developed software for creating dendrograms, multidimensional scaling plots and different types of (color) maps. I am grateful to Peter for developing and making available this excellent software, and for his extensive help when creating the figures.

During a visit on a cloudy afternoon, one of my best friends, Martin de Vries suggested that one seek speech segment distances on the basis of an acoustic representation. Becoming the inventor of a new type of voice-producing prosthesis, this approach seemed obvious to him. I thank him for this valuable suggestion.

In cooperation with Roberto Bolognesi I worked on the comparison of Sardinian dialects. In this small project, the use of acoustic segment distances was developed and the use of the Levenshtein distance was improved. I thank Roberto for his help and his friendly cooperation.

In the field of phonetics and phonology I got the help of many persons. I thank David Weenink, Dicky Gilbers, Vincent van Heuven, Wouter Jansen, Angelika Braun, Tjeerd de Graaf and Christine Siedle for explanation and advices. I thank Paul Boersma and David Weenink for making available their excellent PRAAT program.

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Last but not least I thank my parents for their empathy during the more than five years of this project.

In the center of the coat of arms of the university of Groningen, an open Bible is shown. On the left page the words *Verbum Dni* are found, and on the right page the word *lucerna* is printed. This text is a short reproduction for *Verbum Domini lucerna pedibus nostris*: 'the Word of the Lord is a lamp unto my feet' (Psalms 119:105). In the light of this lamp I confess that language variation is a gift of the Creator. It is my wish that this thesis will help scholars in further research of language variation.

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