

# Foreword

This Research Report gives an account of the work that has been carried out at IPDS Kiel between 1990 and 1997 to build up a speech data bank of spoken German. It deals with five fields that have contributed to this goal:

1. the collection of a large acoustic corpus of read and spontaneous speech in German as part of the PHONDAT, ASL and VERBMOBIL projects, and the compilation of handbooks of orthographic transliteration and phonetic transcription for the processing of recorded speech data
2. the creation of a platform for segmental and prosodic labelling and speech analysis: *xassp*— Advanced Speech Signal Processor under the X Window System
3. the development and implementation of a data bank concept and of search tools for data retrieval in a wide array of phonetic questions
4. the building up of an annotated speech data base: *Kiel Corpus of Read/Spontaneous Speech*
5. data bank searches and data analyses
  - generation of pronunciation lexica: canonical citation forms and phonetic variants
  - investigation of connected speech processes: reductions and elaborations at the sentence and utterance levels
  - analysis of phonetic manifestations of phonological systems and features
  - cross-language comparisons of connected speech phenomena.

The first contribution, by Kohler, Pätzold and Simpson, gives an overview of the integrated research framework and its results. It is followed by a comprehensive handbook for the speech processing platform *xassp* and by Pätzold's description of the data bank tools. The remaining articles highlight various aspects of field 5:

- the three papers by Rodgers et al. and Rodgers look at vowel deletion and vowel devoicing in German and English spontaneous and read data from monolingual, multilingual and pluristylistic perspectives;

- the paper by Pätzold and Simpson deals with the acoustic manifestation of the German vowel system in read speech and discusses the problem of speaker normalization.

The research presented here continues IPDS's long-standing interest in connected speech with up-to-date tools of corpus handling and speech processing. The flexible speech environment that we have built up for data acquisition, retrieval and analysis, in conjunction with the large annotated computer-accessible data base of the *Kiel Corpus of Read/Spontaneous Speech*, provides an ideal platform for further examination of segmental and prosodic sound patterns in languages and speaking styles. As our phonetic knowledge about words in context is still very limited such studies are of great value for the modelling of speech communication. They will therefore stay on our agenda for some time to come.

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