

Linguistics

2.1 General description of the department and research activities

Linguistics (comprising phonetics and general linguistics) has a broad research profile, including a number of areas where the department shows an internationally competitive research: various aspects of language and speech processing, e.g. prosody, with speech technology applications, language acquisition, psycholinguistics, neurolinguistics, linguistic typology and the description of less well-known languages and minority languages. Its research is also characterized by a high degree of interdisciplinary cooperation. The department's researchers have close cooperation with colleagues in speech therapy, speech technology, neuropsychology, cognitive science, and semiotics. Crucial for the multidisciplinary and experimentally oriented nature of the research methodology has been the facilities available in the Humanities laboratory. This research infrastructure has played a crucial role in making possible the carrying out of innovative and interdisciplinary research projects.

The department's research profiles are mirrored in undergraduate and graduate course content. The department's staff have produced an extensive amount of education material for introductory courses in general linguistics, and phonetics, as well as courses in prosody, language acquisition and typology. Currently, textbooks are being written for planned courses in language and thought, as well as human and animal communication.

The department has been very successful in obtaining external research grants from state financing agencies (average 4,5 million SEK per year) (Swedish Research Council, The Bank of Sweden Tercentenary Foundation, Swedish Council for Working Life and Social Research). Members of the department have also been active in preparing applications from Lund University for two long-term Linnaeus grants from the Swedish Research Council which are currently being processed.

2.2 Strengths – Weaknesses – Opportunities – Threats with regard to the research of the department

Strengths:

- many external contacts with interdisciplinary research interests
- extensive international contact network
- several young researchers with high research competence in several areas
- well-functioning internal cooperation between research groups

Weaknesses

- Does not have a critical mass within all research groups

Opportunities

- Research environment that easily lends itself to creative interdisciplinary research
- Excellent research infrastructure (Humanities laboratory)

Threats

- Financing system that does not take degree of research-orientation ('forskningsanknytning') as a parameter for financing undergraduate education. For subjects with relatively few undergraduate students but which have a strong research tradition (e.g. linguistics), this leads to shortage of finances for advanced courses taught by professors and other teachers with doctoral degrees.

- High overhead costs that severely limit the leeway of research projects

2.3 Description of the most successful research areas with strong national or international impact

Following is a summary of successful areas of research at the department of linguistics and phonetics exemplified with publications:

Prosody

Prosody has been a profile area at the department of phonetics since its beginning in 1950. Gösta Bruce has continued in the tradition with prosodic research in studies of accentuation, speech rhythm, phrasing and prosodic dialectology. Merle Horne has focussed on spoken discourse, in particular the relation between prosodic structure and information structure.

- Bruce, Gösta. 2007. Components of a prosodic typology of Swedish intonation. In Riad, Tomas & Carlos Gussenhoven (eds.), *Tones and Tunes*, Volume I, *Typological Studies in Word and Sentence Prosody*, 113-146. Berlin: Mouton de Gruyter.

In this study a new typology is proposed for intonational varieties of Swedish extending an earlier typology by Gårding and Bruce. This work with its emphasis on the interaction between accentuation and phrasing at the utterance level has clear implications for the general theory of prosody.

- Roll, Mikael, Johan Frid & Merle Horne. 2007. Measuring syntactic complexity in spontaneous spoken Swedish. *Language and Speech* 50, 227-245. <http://www.ingentaconnect.com/...> Restricted Access

This paper contributes to the understanding of the notion of linguistic 'complexity' using spoken language data. The results are important for the development of speech processing models as well as speech recognition/understanding applications.

Language Typology

Linguistic typology has a long tradition at the department. Focus is currently on languages of south-east Asia. Jan-Olof Svantesson has done extensive work on the Mon-Khmer language Kammu's phonology and morphology while Anastasia Karlsson is currently focussing on its tonal and intonational system. Other Mon-Khmer languages, e.g. Jahai have been the focus of Niklas Burenhult's investigations. Arthur Holmer has done extensive research on Austronesian languages and in particular on the grammar of the Formosan language Seediq. A further area of interest for Svantesson as well as Karlsson has been Mongolian phonology and Mongolian's historical development. Investigations of the ancient language Tocharian has been the focus of Gerd Carling's research. Gulf Arabic syntax constitutes a more recent area of study in the work of Maria Persson.

- Svantesson, Jan-Olof, Anna Tsendina, Anastasia Karlsson & Vivan Franzén. 2005. *The phonology of Mongolian*. Oxford: Oxford University Press.

This work is the only modern book on Mongolian phonology. It presents new data and analyses of both the synchronic and diachronic phonology of Mongolian. It has received very positive reviews in *Bulletin de la Société de linguistique de Paris* (101:2, 276-281) and *Journal of Asian Studies* 60, 1158-1160 as well as *Linguist list* Vol-17-2300.

- Holmer, Arthur. 2006. Seediq - adverbial heads in a Formosan language. In Gärtner, Hans-Martin, Paul Law & Joachim Sabel (Eds.), *Clause structure and adjuncts in Austronesian languages*, 83-123. Berlin: Mouton de Gruyter.

This article contributes to widening the applications of typology by discussing the lexical phenomenon of Formosan adverbial verbs and suggesting possible links to properties of the syntax (V-initial word order).

- Carling, Gerd. 2000. *Die Funktionen der lokalen Kasus im Tocharischen*. Berlin: Mouton de Gruyter.

The book makes an important contribution to the understanding of Tocharian and its use of nominal cases and adpositions to express local and temporal relationships. The analysis is based on an exhaustive survey of the available Tocharian text corpus.

Language acquisition

Language acquisition, both first and second language learning is another strong research area at the linguistics department. Gisela Håkansson's work has focussed on language acquisition from different perspectives: from language teaching to first and second language acquisition to language acquisition disorders.

The relation between speaking and writing and the development of the writing competence in language acquisition has been a focus for Sven Strömqvist's research. Strömqvist has been involved in literacy and writing in a cross-linguistic perspective as well.

- Håkansson, Gisela. 2005. Similarities and differences in L1 and L2 development. Opening up the perspective: including SLI. In Pienemann, Manfred (ed.), *Cross-linguistic aspects of Processability Theory*, 179-197. Amsterdam: John Benjamins.

This article adds a new perspective to the study of language acquisition since it combines two areas – language acquisition and language impairment.

- Strömqvist, Sven & Verhoeven, Ludo (Eds.). 2004. *Relating events in narrative*. vol. 2, *Typological and contextual perspectives*. Mahwah, N.J.: Lawrence Erlbaum.

The book contributes to our understanding of the cognitive consequences of linguistic diversity by summarizing recent advances in theoretical and methodological approaches to the crosslinguistic study of narrative discourse.

Cognitive semantics

The area of cognitive semantics, in particular the investigation of lexical semantic structure in various languages has been the focus of studies by a number of the department's researchers. Caroline Willners has investigated lexical semantic phenomena in the area of antonymy relationships. Jordan Zlatev has focussed on verbal semantics, in particular the area of spacial relationships.

- Zlatev, J. (2007c) Spatial semantics. In H. Cuyckens and D. Geeraerts (Eds.) *The Oxford Handbook of Cognitive Linguistics*, 318-350. Oxford: Oxford University Press.

This book is the most authoritative presentation of cognitive linguistics up to date. Zlatev's chapter presents an overview of the findings, methodologies and debates on the topic of spatial semantics, with conclusions and guidelines for future research.

2.4 Description of most promising research areas or research directions in the department, inc. areas you would like to see develop in the next 5-10 years and actions you consider necessary to allow this development

A strong and expanding research area at the department is related to the analysis and modeling of language behaviour in real time. The department has a long-standing tradition in phonetics, especially prosody, studying the dynamics of speech in real time. Over the last five years, the dynamics of the writing and reading processes in real time have been added to this tradition along with neurolinguistic studies of activity distribution in the cortex as subjects are reading or listening. The technologies and methods used are keystroke and penstroke logging, eyetracking (visual reading) and finger tracking (tactile reading) and EEG/ERP measurements. All of these subfields of research combine research questions from the Humanities about language, communication and cognition with quantitative and experimental methods. This has paved the way for cooperation with adjacent disciplines, mainly cognitive science, psychology, speech therapy and cognitive neuroscience. A Linnaeus grant application, "Thinking in time: cognition, communication and learning", encompassing all these disciplines, has been submitted to the Swedish Research Council by Lund University.

An additional, related interdisciplinary research direction represented at the department involving scientists from linguistics, semiotics, cognitive science, philosophy, and anthropology is 'cognitive semiotics' with a focus on investigations aiming at obtaining a better understanding of what distinguishes human beings from other species, and how this specificity evolved. Questions involving the relationship between language, gestures, pictures and music, the acquisition of these semiotic resources in childhood, as well as the neural underpinnings of language related cognitive-semiotic capacities constitute basic research questions within this direction. Currently a Linnaeus grant application from Lund University related to this cognitive science-oriented research area ("Center for cognitive semiotics") is being processed by the Swedish Research Council.

Following is a summary of what the department feels to be the most promising research areas or research directions during the coming years, exemplified with publications:

Neurophysiological studies of language and speech processing

The area of neurophysiological studies of language and speech processing constitutes a new interdisciplinary research direction that is becoming increasingly stronger in the department. Since 2004, the department has had external funding from the Swedish Research Council to finance an initial project led by Merle Horne dealing with the processing of syntactic and prosodic structure in the brain. External funding to this area has been increased from 2008 to allow research in neurophysiological correlates of lexical semantic processing (grant to Caroline Willners).

- Roll, Mikael, Merle Horne & Magnus Lindgren. 2007. Object Shift and Event-Related Brain Potentials. *Journal of Neurolinguistics* 20, 462-481. <http://dx.doi.org/10.1016/j.jn...> Restricted Access

This Event Related Potential investigation focussing on Object Shift makes a seminal contribution to the study of neurophysiological correlates of grammatical and semantic processes using Swedish data.

Reading process

Recently, through external financing from The Swedish Council for Working Life and Social Research, Sven Strömqvist and co-workers have been involved in innovative research which has focused on obtaining a better understanding of the tactile reading process in blind individuals.

- Breidegard, B., Jönsson, B., Fellenius, K. and Strömqvist, S. (2006) Disclosing the Secrets of Braille Reading—Computer-Aided Registration and Interactive Analysis. *Visual Impairment Research*, 8:49–59.

This study utilized the first technology ever developed for the computerized on-line registration and analysis of finger movements during Braille reading. This pilot project lays the foundation for more comprehensive large-scale studies in the domain of tactile reading.

Writing process

Another research direction that has received extensive external funding from the Swedish Research Council and The Swedish Council for Working Life and Social Research during the past few years is focussed on the writing process. Even clinical aspects of the writing process, e.g. understanding the phenomenon of dyslexia is included in the this innovative research orientation (Åsa Wengelin). This area which is of interest to school teachers, has also received external funding for courses in the teacher training program through Lund University Education.

- Wengelin, Åsa. 2007. The Word Level Focus in Text Production by Adults with Reading and Writing Difficulties. *Writing and Cognition. Research and Applications (Studies in Writing)* 20, 67-82.

This study represents an important contribution to the development of experimental methods for studying the writing process in individuals with dyslexia.

Evolution of language and speech

A further interdisciplinary research area that is under development is gestural communication and its relation to the evolution of language and speech. The faculty financed interdisciplinary project “Language, Gestures and Pictures” (Zlatev, Sonesson) has been very successful and led to a further project (SEDSU) with EU-funding: <http://www.sedsu.org/>.

- Zlatev, Jordan. 2007. Language, embodiment and mimesis. In *Body, Language and Mind. Vol 1. Embodiment*, Ziemke, T., Zlatev, J. and R. Frank (eds.). Berlin: Mouton.

This work constitutes an important contribution in understanding the relationship between embodiment and language, by turning to the concept of (bodily) *mimesis*, and proposing the notion of *mimetic schema* as a mediator between the individual human body and collective language.

Sociolinguistics

The sociolinguistics of minority languages in Sweden and Europe is an area that can be expected to receive more focus in the coming years. An example of this is a new research

project lead by Gerd Carling involving the investigation of the minority language Romani will be an area that will be developed during the coming years at the department.

2.5 List of publications which best represents the research activity

See publications mentioned in 2.3

2.6 List of publications which best represents renewal of research activity

See publications mentioned in 2.4

2.7. List of publications which cannot be defined as Scientific publications but are still important for understanding scientific development

2.8 List of publications which are not yet included in the Lund University Publications (LUP) database (2003-2007) but which you still regard as essential.

2.9 Additional sources of information

Current externally financed research projects

- **Adverbs as Verbs in Formosan Languages** *The Bank of Sweden Tercentenary Foundation* (Arthur Holmer (Responsible scientist))
- **Reading while Writing** *Swedish Research Council* (Åsa Wengelin (Responsible scientist))
- **Separating Intonation from Tone** *The Bank of Sweden Tercentenary Foundation* (Anastasia Karlsson (Responsible scientist), David House, Jan-Olof Svantesson, Damrong Tayanin)
- **Grammar, Prosody, Discourse and the Brain. ERP-studies in language processing** *Swedish Research Council* (Merle Horne (Responsible scientist), Mikael Roll)
- **SIMULEKT: Simulating Intonational Varieties of Swedish** *Swedish Research Council* (Gösta Bruce (Responsible scientist), Björn Granström, Susanne Schötz, Laura Enflo, Jonas Beskow)
- **Verb Syntax in Gulf Arabic Dialects** *Bank of Sweden Tercentenary Foundation* (Maria Persson (Responsible scientist))
- **Driving Forces of Semantic Categorisation: Meaning across Domains and Languages among Minorities of the Malay Peninsula** *Swedish Research Council*, Niclas Burenhult (Responsible scientist)

- **Exploring Symbiotic Language Development: Studies in the Integrative Structures of Scandoromani (Swedish and Norwegian Traveller Romani)** *Swedish Research Council*, Gerd Carling (Responsible scientist)
- **Contrast in Language, Thought and Memory: Textual, Psycholinguistic and Neurolinguistic Perspectives** *Swedish Research Council* (Caroline Willners (Responsible scientist), Carita Paradis, Joost van de Weijer, Magnus Lindgren).
- **Linguistic effects on cognition** *Swedish Research Council* (Sven Strömquist, (Responsible scientist), Richard Andersson, Kenneth Holmqvist)
- **Tactile reading** *Swedish Council for Working Life and Social Research* (Sven Strömquist, (Responsible scientist), Björn Breidegard, Richard Andersson, Yvonne Eriksson, Kerstin Fellenius)
- **Distributed Archive Management of Language Resources (DAM-LR)** *European Commission (Research Infrastructures)*, Peter Wittenburg, MPI for Psycholinguistics (Project coordinator); Sven Strömquist (Swedish coordinator), Other members of the Swedish team: Susanne Schötz, Marcus Uneson, Tomas Schönthal
- **Common Language Resources and Technology Infrastructure (CLARIN)** *European Commission (ESFRI (European Strategy Forum on Research Infrastructures))*, Sven Strömquist (Lund coordinator), Other members of the Swedish team: Tomas Schönthal

Doctoral dissertations since 2003

- Frid, Johan. 2003. *Lexical and acoustic modelling of Swedish prosody*. Travaux de l'institut de linguistique de Lund 45.
- Hansson, Petra. 2003. *Prosodic phrasing in spontaneous Swedish*. Travaux de l'institut de linguistique de Lund 43.
- Mattson Anna Flyman. 2003. *Teaching, learning, and student output*. Travaux de l'institut de linguistique de Lund 42.
- Karlsson, Anastasia Mukhanova. 2005. *Rhythm and intonation in Halh Mongolian*. Travaux de l'institut de linguistique de Lund 46.
- Schötz, Susanne. 2006. *Perception, Analysis and synthesis of speaker age*. Travaux de l'institut de linguistique de Lund 47.
- Uppstad, Per Henning. 2005. *Language and literacy. some fundamental issues in research on reading and writing*. Lund: Dept. of Linguistics and Phonetics.
- Zetterholm, Elisabeth. 2003. *Voice imitation. A phonetic study of perceptual illusions and acoustic success*. Travaux de l'institut de linguistique de Lund 44.

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