The Centre for Language Studies (CLS) carries out top-level research in Linguistics, Language and Speech Technology, and Communication in a stimulating academic environment. Key aspects are innovation, an interdisciplinary approach, and a strong commitment to acquiring research funds.

Research at CLS takes place in two programmes:

• Researchers working within the Language in Mind programme consider language to be a window into the cognitive functioning of the brain. They aim to explain how the architecture of the language system interacts with human language processing skills. Using data from native and foreign language acquisition, from language production and comprehension, as well as from spoken and signed languages, they develop and test comprehensive theories about language processing on the one hand and the structure of the language system on the other, employing a wide variety of research methods.

• Researchers working within the Language in Society programme see language as a social tool that is essential for society, studying it in its historical, cultural and social context. They focus on language contact, sociolinguistic variation, and the interactional foundations of language. In addition, they study various aspects of functional communication, including language use in the classroom and other multilingual contexts, language and speech technology designed to improve text production and communication with the disabled, and persuasive communication.

Each programme contains seven smaller groups led by principal investigators. These thematically coherent groups create platforms for discussing research plans and results, facilitating communication...
between and among junior and senior researchers, and helping to support academic integrity.

**Research facilities**

CLS research is largely empirical, using large databases, and experimental and computational methods and techniques. As a result, facilities such as experimental laboratories with appropriate equipment, powerful computers and sophisticated software – as well as enriched written, spoken, and multimodal (sign) language databases – play an increasingly important role. The Executive Board has established Linguistics as a focal area of research for the University. Thanks to a structural investment in CLS research by the Board, there is now a state-of-the-art language laboratory, including a web experimentation site, instruments for eye tracking and measuring language behaviour, facilities for making observations with video recordings, and a high-end computing cluster with large storage facilities.

**Awards**

Prof. Asifa Majid won a prestigious Ammodo KNAW award for her innovative research on the relationship between language, cognition, and the senses. The award, which is intended to encourage unfettered fundamental scientific research by internationally recognised researchers working in the Netherlands, consists of €300,000, to be used by eight recipients per year at their own discretion to fund either their own research or a research project which they are leading into fundamental scientific issues.

Prof. Mirjam Ernestus has been elected as a member of the Royal Dutch Academy of Arts and Sciences (KNAW).

**Collaboration**

Widespread international collaboration among CLS researchers has contributed to the growing success of international recruitment in recent years: 25 percent of lecturers have come from abroad to work in Nijmegen, as have 40 percent of our PhD students.

CLS is engaged in long-standing collaboration with the Max Planck Institute for Psycholinguistics (MPI) and with the Donders Institute for Brain, Cognition and Behaviour. Together with MPI and the Donders Institute, CLS participates as a partner in the International Max Planck Research School. CLS researchers also collaborate with researchers from the Donders Institute and the MPI in the Baby Research Centre and in the national Language in Interaction Consortium.

Examples of formal international collaboration in 2015:

- **Collaboration in HealthNar**, a programme established to strengthen and consolidate the emerging field of narrative communication in healthcare, with the University of Antwerp (Belgium), the University of New South Wales, Sydney (Australia), Universität Linz (Austria), Universität Augsburg (Germany), Edith Cowan University, Perth (Australia) and Bowling Green State University, Ohio (USA). The aim is to build a multidisciplinary research exchange network dedicated to the use of narratives in relation to health, by bringing together renowned international scholars working on health psychology, media psychology, health communication, the arts and interactive communication. HealthNar was founded by the International Research Staff Exchange Scheme (IRSES).

- Participation in the Marie Curie International Training Network ‘Investigating Speech Processing In Realistic Environments’ (INSPIRE) with the Technical University of Denmark, KU Leuven, Philips Research Laboratories Eindhoven (NL), Technical University Eindhoven (NL), Tampere University of Technology (Finland), Universidad del Pais Vasco (Spain), University College London (UK), University of Edinburgh (UK), University of York (UK) and University of Sheffield (UK).

- Collaboration with the University of Arizona (USA), University of Alberta (Canada), University of Victoria (Canada) and the University of Canterbury (New Zealand) in the project ‘Speech reduction across languages and dialects’, funded by the National Science Foundation (USA).

- Collaboration with Aarhus University (Denmark), the University of Antwerp (Belgium), Vienna University of Economics and Business (Austria), Copenhagen Business School (Denmark),
Aalto University (Finland) in ‘Linguists for Business Research Initiatives’ (LIBRI), an international network of linguists collaborating to advance cross-disciplinary aspects of research on the role of language and communication in business and organisational settings.

- Collaboration in the large-scale, cross-linguistic project ‘Evolution of Semantic Systems’, which is funded by MPI Nijmegen within a consortium of 60 universities across Eurasia. The main aim of the EoSS project is to investigate how meanings vary in space and change over time, by collecting data from at least 50 Indo-European languages.

**Research results**

Women are better at learning a second language than men. This is the case in all languages and cultures, according to Dr Frans van der Slik, Prof. Roeland van Hout and Dr Job Schepens, and therefore they conclude it must be a genetic factor. They reached this conclusion after analysing the results of 27,119 state exams in Dutch as a second language, from adult men and women from 88 different countries. Gender differences were analysed across countries of origin and continents, and across mother tongues and language families. Female learners consistently outperformed male learners in speaking and writing proficiency. This gender gap remained remarkably robust and constant when other learner characteristics were taken into account, such as education, age of arrival, length of residence and hours studying Dutch.

Deaf signers of Sign Language of the Netherlands (NGT, Nederlandse Gebarentaal) often combine their signing with mouthings: silent articulations of lexical items from spoken Dutch. In his dissertation, Dr Richard Bank showed that the relationship between mouthings and signs appears to be not very strong. Although most signs are accompanied by so-called standard mouthings, mouthings do not necessarily have a one-to-one relationship with the signs they co-occur with. They can spread over adjacent signs to combine and group multiple signs under one mouthing, or they can occur in the sign stream without an accompanying sign, fulfilling a role that could have been taken by one mouthing, or they can occur in the sign stream without an accompanying sign, fulfilling a role that could have been taken by a manual sign as well. The general conclusion is that mouthings are a paramount feature in NGT conversation, and that they can be analysed as instances of code-blending, the simultaneous mixing of languages in different modalities. Understanding the role of mouthing reveals substantial new insights into the cross-modal interaction between two languages.

‘Awfully good’, ‘extremely interesting’, ‘a tsunami of complaints’: language users can use various stylistic devices to intensify their evaluative utterances. In her PhD research, Christine Liebrecht investigated the presence and perception of such intensifiers. Analysis of numerous texts showed that Internet texts contain more intensifiers than newspaper texts, columnists use more intensifiers than critics, and messages with emotionally topics contain more intensifiers than messages with a less emotional subject. An experimental study showed that a negative expression is generally more powerful than a positive expression (‘a bad hotel’ is perceived as more powerful than ‘a good hotel’), but that this difference disappears when the evaluations are intensified (‘a horrible hotel’ is just as strong as ‘a fabulous hotel’).

Dr Stefan Grondelaers contributes to the large national survey Sprekend Nederland (Talking Dutch), which was set up to chart the diversity and dynamism of contemporary spoken Dutch. The Dutch that is spoken in the Netherlands is a relatively homogenous, standardized language. However, it features massive variations in accent and dialect. This research involves not only collecting the production of spontaneous speech, but also the perception of accents. The Dutch systematically associate the Limburg accent with ‘cosiness’ and happiness, but also with stupidity; people from the Randstad are deemed prestigious but cold and distant on the basis of their accent. The Groningen accent is not associated with any desirable social qualities. The most shocking thing about these stereotypes is that they are applied uncritically to speakers who have these accents, people about whom we know virtually nothing.

**Societal impact**

Disseminating knowledge to the general public, raising awareness of the essential role of language and communication in society and developing ‘products’ based on research all play an important role at CLS. Researchers at the Centre bring together externally funded projects that involve language and speech technology in the Centre for Language and Speech Technology (CLST). Through CLST, CLS collaborates with many societal and commercial partners.

April 2015 saw the launch of NovoLanguage, a spin-off company from CLST. NovoLanguage makes products for language learners by using innovative language and voice technology. The company’s strength is the attention given to spoken fluency in their new products. This is a feature that Dr Helmer Strik, one of the company’s founders, believes is less common in other language training products. The company has its origins in research and the usage data generated by the applications will enable CLST to continue to enrich its research. Close cooperation with NovoLanguage, which is located on the Nijmegen campus, also means students have the opportunity to experience how aspects of their research work out in practice.
Aslı Özyürek (Professor of Gesture Language and Cognition) investigates the relationship between body, language, cognition and communication. The fundamental question is: to what extent do our physical actions interact with or shape language, its processing and its use in communication? In 2015, she received an NWO Vici grant for her project ‘Giving cognition a hand’. In this project she studies whether spatial expressions in sign language influence spatial cognition of sign language users differently when compared with users of spoken language.

**Future research**

Prof. Aslı Özyürek has been awarded a Vici grant for ‘Giving cognition a hand: Linking spatial cognition to linguistic expression in native and late learners of sign language and bimodal bilinguals’. Thinking and speaking about space are basic elements for our everyday communication. When deaf people sign, they express spatial relations visually. They have to sign with their hands and body, for instance, if something is in, on, under or to the left or right of something else, close or wide apart. The way they sign it resembles how they perceive the situation they describe. The description is therefore much more iconic and much less abstract than in spoken language. Özyürek’s project will investigate whether this aspect of sign language influences the spatial cognition of sign language users.

Dr Mirjam Broersma was awarded a Vidi grant for her project ‘We learn from our mistakes – or do we? Towards more efficient use of talking and listening experience in a second language’. Anyone who learns a second language is confronted with ‘strange’ new sounds. The chance of making mistakes is considerable, but how do you learn from these errors if you don’t notice them yourself? She will investigate the best way of making somebody aware of their mistakes with respect to improving their skill in a language.

Dr Roel Willems focuses on how the brain plays a role in how we understand language. He looks at how parts of our brain that are not traditionally thought of as being involved in language play a role when we understand language, most notable stories. He has acquired a Vidi grant for ‘Why do we like stories?’ If we read a story, we sympathise with the main character and see in our imagination what we are reading. People differ enormously in which stories they prefer. This project will study how our ability to imagine things influences the way we value stories and how this differs from one person to another.

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mini-games are small, self-contained games which focus on well-defined learning topics which are highly motivating, reusable and cost-effective. The games are available for free on www.gobl-project.eu.

Interpreters who translate at hearings of asylum seekers have far more influence on the interviews than is formally allowed. Their translation of conversations between asylum seekers and the Immigration and Naturalization Service (IND) differs from what is actually said in every case, because the interpreters summarize, clarify and even leave sentences untranslated. The IND Code of Conduct does not allow this, so officially the interpreters go beyond their remits, according to Susanne van der Kleij, linguist and Foreigners Affairs Advisor to the Ministry of Security and Justice. For her PhD research, she analysed the interaction between asylum seekers, IND officers and interpreters. ‘I was amazed at what goes wrong in minor details in the translation, but also at how it eventually gets put right again.’

Dr Sharon Unsworth was one of many CLS participants at the DRONGO language festival in Utrecht. She gave a keynote lecture entitled ‘Maintaining the home language: Some do’s and don’ts’. One of the biggest challenges facing parents raising their children bilingually is how to maintain the home language. How do you ensure a solid start? And how do you keep it up? In her lecture, Unsworth drew on her own experience as a bilingual mum to translate some recent research results into parental practice. She discussed factors such as the role of parents, siblings and friends, as well as the impact of language input at day-care and school, and from TV and books. What helps and what doesn’t? Does it matter whether your child actively speaks the home language? Or is understanding alone enough? Unsworth summarised findings from a number of different studies and tried to help parents figure out what these results might mean for them.
Key publications


Dissertations: 15
Scientific publications: 254
Professional publications: 67
Dr Connie de Vos was awarded a Veni scholarship for ‘The face in sign language interaction’. In spontaneous conversations, sign language users not only use their hands, but also their body movements and facial expressions. Through a comparison between Dutch sign language and the young Balinese sign language Kata Kolok, the origin and functions of these facial expressions will be determined.

Prof. Antal van den Bosch has received a grant for research on the exchange between different disciplines of data from scientific texts. The grant, which has been obtained from the EU’s Horizon 2020 project ‘FutureTDM: Scientific Information in the Digital Age’, will be used to make an inventory of the state of affairs in the field of Text and Data Mining (TDM) and answer the question as to how best to increase the use of TDM in scientific texts. TDM enables researchers from different disciplines to analyse, extract insights and knowledge, and exploit diverse, complex datasets from various digital media. In the EU, the use of TDM is significantly lower than in some countries in the Americas and Asia. Competitive advantage is being lost and opportunities for knowledge discovery are being missed. The aim of the Future TDM project is to improve the uptake of TDM in research environments in the EU.