



LUND
UNIVERSITY

Annual Report

LUND UNIVERSITY HUMANITIES LAB | 2019



WELCOME.....3

THE DEAN’S INTRODUCTION.....4

STEERING COMMITTEE AND ORGANISATION.....5

BRIEF FACTS.....6

RESEARCH.....8

COLLABORATIONS.....25

TRAINING, TEACHING, CONSULTATIONS.....28

VISIBILITY, ACCESS, OUTREACH.....30

IN THE MEDIA.....32

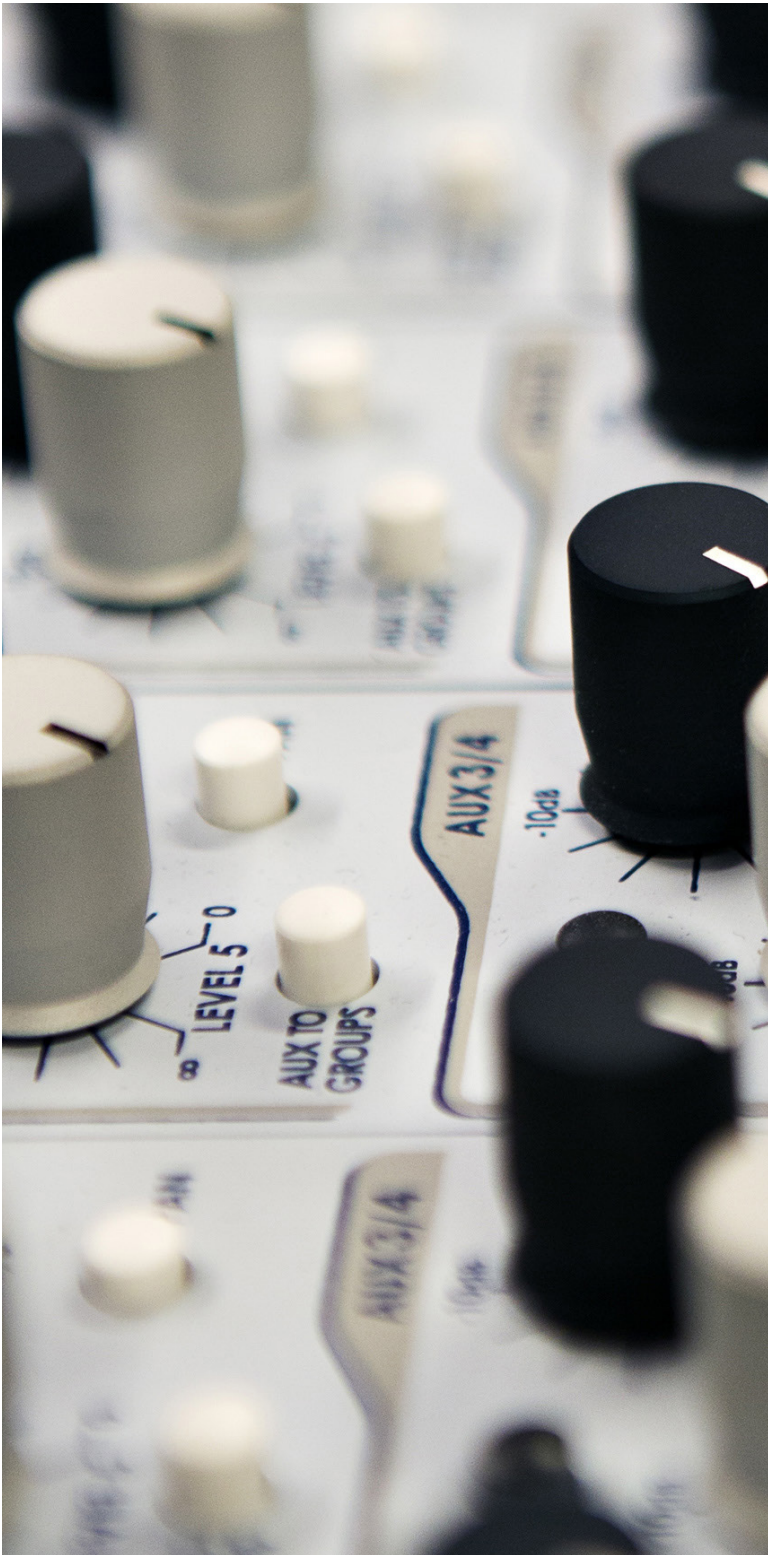
LAB DEMOS.....34

VISITORS.....36

ORGANISATION OF CONFERENCES, WORKSHOPS AND SYMPOSIA.....37

STAFF MEMBERS 2019.....38

FUNDERS 2019.....40



Welcome to the Annual Report of Lund University Humanities Lab

We are a department for research infrastructure at Lund University open to researchers, teachers, and students at Lund University and beyond. We host technology, methodological know-how, data management and archiving expertise. Lab activities evolve around issues of culture, communication, and cognition – traditional domains of the Humanities – but many projects also involve the Social Sciences, Medicine, the Natural Sciences, Engineering, and e-Science. The Lab enables researchers to combine traditional and novel methods, and to interact with other disciplines. We provide training in hosted technologies and related methods through courses and tutorials, seminar series, and demo sessions. We are also an arena for contact and collaboration between academia and stakeholders in education, industry, health, and cultural institutions, and we act locally, nationally, and internationally.

An important development in 2019 was the official recognition of the Lab as a university-wide infrastructure with extra annual support from the Vice-chancellor. This change reflects the role the Lab now plays for a wide range of researchers, disciplines, and initiatives across campus. We are grateful for this acknowledgement.

Equally important was the launch of The Wallenberg AI, Autonomous Systems and Software Program – Humanities and Society (WASP-HS) whose aim is to develop competence in artificial intelligence and autonomous systems for humanities and society. The WASP-HS national graduate school is headed from Lund University. The proximity between the Lab, the graduate school, the networks *AI Lund* and *e-Science@Lund* promises to create critical synergy effects.

In 2019 the Lab saw many new users, new projects and collaborations, and the consolidation of ongoing ones. We offered numerous courses and tutorials, and hosted a string of visitors and groups, including the Swedish Minister of Higher Education and Research, Matilda Ernkrans, and the Swedish Research Council. We hosted the world's largest international conference on second language acquisition (EuroSLA 29), held workshops and meetings on everything from eye-tracking to digital tools for text transcription. We recruited a new Lab member via a Marie Skłodowska-Curie Individual Fellowship, intensified our collaboration with Lund Bioimaging Center, and participated in local and national discussions on research data, and infrastructural needs in the Humanities and Social sciences.

We also received a generous donation from the Einar Hansens Allhemsstiftelse to upgrade the motion capture studio and virtual reality equipment. We are deeply grateful for this support.

This Annual Report 2019 showcases a selection of Lab activities highlighting that the Humanities Lab remains a dynamic and exciting environment where researchers can tackle the scientific challenges ahead.

Marianne Gullberg
Director of Lund University Humanities Lab



The Dean's introduction

The Joint Faculties of Humanities and Theology are proud to host Lund University Humanities Lab. A leading research and training facility, the Humanities Lab has become a key infrastructural unit at Lund University. Since its official opening in 2007, the Lab has inspired scholars in the Humanities and Theology to diversify and develop new approaches to challenges encountered in their research. Many of our disciplines now rely on the Humanities Lab as a fundamental component in their research with an increasing emphasis on digital tools, computational power, mixed methods, and interdisciplinary collaborations. We are also pleased that the Humanities Lab has become a vital part of research at other faculties. In 2019 it was granted official status as a university-wide infrastructure with additional funding from the University in recognition of its role for researchers and students across campus and beyond. Researchers from all over the world collaborate with colleagues at and through the Lab. Lund University Humanities Lab is a dynamic interdisciplinary research unit where scholars and students come together in a uniquely exciting and highly productive research environment.



Johannes Persson
*Dean of the Joint Faculties
of Humanities and
Theology*

Steering committee and organisation



**Director –
Marianne Gullberg**

Marianne Gullberg is professor of Psycholinguistics at the Centre for Languages and Literature. Her fields of expertise include adult second language acquisition, bilingual acquisition and processing, and gesture production and comprehension in acquisition. She previously headed a research group on multilingual processing at the Max Planck Institute for Psycholinguistics with Prof. P. Indefrey, and is a co-founder of the Nijmegen Gesture Centre with Prof. A. Özyurek, the first of its kind. Her current research targets multimodal bilingual language processing, the earliest stages of implicit language learning, and bimodal discourse cohesion. She is the recipient of a Wallenberg Scholar Grant.



**Deputy director –
Victoria Johansson**

Victoria Johansson is associate professor and senior lecturer of Linguistics at the Centre for Languages and Literature. Her research focuses on language development through the lifespan, with special focus on language production and writing development, including developing research methodologies using keystroke logging and eye-tracking.



**Research Engineer –
Stefan Lindgren**

Stefan Lindgren is a research engineer in the Lab with special responsibility for technology and procurement. His particular expertise lies in 3D data, motion capture, and Virtual Reality. In this, he works closely with archaeologists and historians, but also cognitive scientists, and linguists.

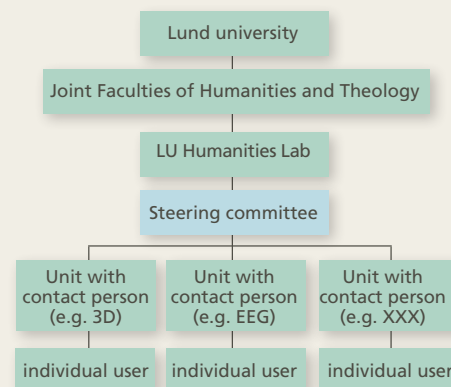


**Administrative Coordinator –
Maja Petersson**

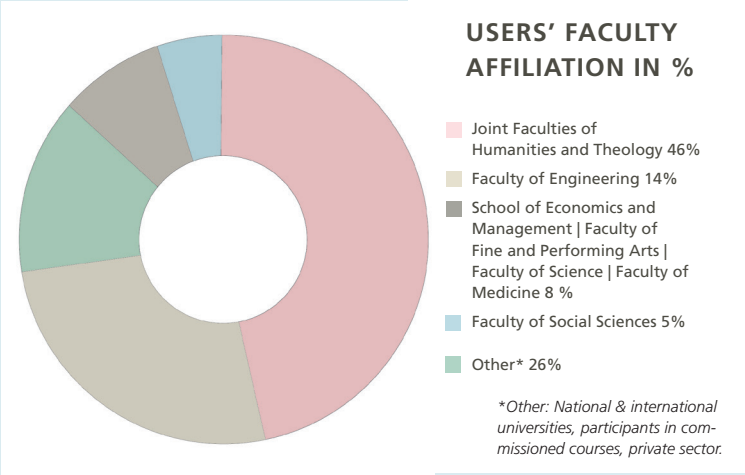
Maja Petersson is administrative coordinator in the Lab. She is responsible for monitoring action plans, policy, and procedure to optimise project management in the Lab. She is also responsible for communicating about the Lab internally and externally.

ORGANISATION

The Lab functions as an autonomous department, sorting directly under the Joint Faculties of Humanities and Theology. It is led by the Director, who is also the Chairman of the Steering committee. Organisationally, research in the Lab is of two kinds. Most research in the Lab is conducted by scholars whose research grants and groups are located in their home departments. These scholars come to the Lab to conduct their empirical studies using Lab equipment and resources, and then return to their home departments. The Lab also hosts its own externally funded research projects focusing on infrastructure, and exceptionally projects with grants and research groups located in the Lab.



NEW PROJECTS	46
CONSULTATIONS	168
DEMOS	48
GROUP TUTORIALS	12
PHD LEVEL COURSES	6
COMISSIONED COURSE	1
LAB AREA M2	530
GUEST RESEARCHERS	11
MAJOR GRANTS/ AWARDS	5
SOCIAL MEDIA FOLLOWERS	870



HUMANITIES LAB WORLD WIDE TRAVELS/VISITORS
Australia | Denmark | Canada | Finland | France | Germany | Great Britain | Greece | Mexico | the Netherlands | Norway | Spain | Sweden | USA
Germany | the Netherlands | South Africa | Sweden



EuroSLA 29

The 29th annual conference of the European Second Language Association, EuroSLA 29 (<https://www.eurosla2019.se/>), was held at Lund University in 2019 in a collaboration between LU Humanities Lab and the Centre for Languages and Literature. EuroSLA is the biggest conference in the world entirely dedicated to second language acquisition. The conference had 289 registered participants from 28 countries who gathered for a roundtable pre-event entitled *Migration and second language acquisition: Implications for theory and practice*; a doctoral workshop where 23 doctoral students presented their ongoing work and received individual feedback from a leading researcher; and a three-day conference where 148 papers and four plenaries were presented. As usual at EuroSLA, all areas of SLA were represented in the presentations, ranging from word acquisition, effects of pronunciation training, learning language from TV and computer games, to neurocognitive measures of bilingual processing. For the first time in the history of EuroSLA, the conference had a deaf plenary speaker and deaf presenters - an important step toward a better representation of the languages of the world.

The conference was generously sponsored by the Swedish Research Council, the Crafoord Foundation, the Birgit Rausing Language programme, the Royal Society of Letters in Lund, and *Language Learning, A Journal of Research in Language Studies*.

Conference chair: Marianne Gullberg | **Local scientific committee:** Jonas Granfeldt (vice chair), Malin Ågren, Chiara Gargiulo, Henrik Gyllstad, Marie Källkvist, Frida Splendido, Lari-Valtteri Suhonen. | **Conference administrator:** Maja Petersson.

Research

This section presents a selection of the research activities in the Humanities Lab in 2019. It aims to give a flavour of the scope, breadth, and interdisciplinarity of the work done in the Lab.

TEXT-LANGUAGE RESOURCES, SWECLARIN

Most scholars in the Humanities and Social Sciences work on and with text in various formats, and interest in the use of computer-based tools for text analyses is growing, ranging from OCR technology to enable the search and tagging of scanned texts, to sophisticated tools for searching, processing, and analysing texts, or for creating corpora (structured and annotated collections of materials).

LU Humanities Lab is a member of the Swedish national consortium for language resources and technology, *Swe-CLARIN* (see [National and international collaborations](#)). This national e-science consortium, funded by the Swedish Research Council until 2024, is itself a part of the European Research and Infrastructure Consortium *Common Language Resources and Technology Infrastructure*

(ERIC CLARIN). *CLARIN* provides access to (contemporary and historical) language-and-text-based material, and to tools for exploring and investigating such data. Since 2017 the Humanities Lab is a certified *CLARIN Knowledge Centre*, specialising on multimodal and sensor-based language data. The Lab supports and collaborates with many projects guided by the local coordinator (Frid).

In 2019 Swe-CLARIN resources were involved in several ongoing projects providing data analysis and visualisation expertise. For example, the project *Diachronic Atlas of Comparative Linguistics* (DIACL; Carling) develops and maintains an open access database with lexical and grammatical data from 500 languages from 18 language families. Swe-CLARIN provided help with visualisation and data analytics. The project *Repository and Workspace for Austroasiatic Intangible Heritage* (RWAAI, Kruspe, Burenhult) builds a digital multimedia resource committed to the preservation and documentation of languages and cultures from the Austroasiatic language family. Swe-CLARIN provided methods for text recognition of handwritten field notes, and automated audio transcriptions. Other collaborations included a project in Information Studies exploring text mining from Twitter and tweets (Haider), and in Linguistics measuring the semantic associations between abstract and concrete words (Horne, Roll, Blomberg, Frid).

SWE-CLARIN



In two collaborations with the Medical faculty, language technology and 'natural language processing' (NLP) methods and resources were used. The project *AIR Lund Chest pain* (Björk, Ekelund, Ohlsson, Frid, et al.) brings

together Lund University, Clinical Studies Sweden, Skåne University Hospital. The aim is to develop a decision support system based on information extraction from text in medical journals to facilitate rapid and efficient diagnosis and treatment of acute heart conditions. In a similar project in Experimental Medical Science, NLP methods were used to extract information from academic papers on how diseases and chemical substances are mentioned (Aits).

The Swe-CLARIN consortium formed a thematic working group to develop a resource for benchmarking Swedish Named-Entity Recognition and Classification (NERC) systems. The aim is to develop a tool for finding and replacing Swedish names in written materials in order to anonymise (or 'pseudonymise') them. The filtering of names and anonymising of text materials (especially in interview data) is becoming increasingly important. The NERC group links Swe-CLARIN nodes at Lund, Gothenburg and Linköping who in 2019 engaged in categorisation and annotation work. All tools developed are freely available.

The Swe-CLARIN coordinator Frid had numerous other consultations, providing advice on text mining and the analysis and visualisation of various types of linguistically associated data, such as 3D articulography, factors behind linguistic borrowing, semantic associations, and conceptual maps. Swe-CLARIN was also presented to students in Linguistics, and demonstrated during Lab tours and demos. Lund also participated in two national consortium meetings (Frid, Gullberg), co-organised one workshop (Frid, J. Larsson), contributed to publications, and presented Swe-CLARIN-related work at four international conference (Frid et al.; see [Organisation of conferences, workshops and symposia](#)).

EFFECT OF HUNGER ON VISUAL ATTENTION AND CHOICE

Kerstin Gidlöf & Tobias Otterbring,
Department of Management, School of
Business and Social Sciences, Aarhus University,
Denmark | Annika Wallin, Cognitive
Science, Lund University

This study investigates the effect of hunger on visual attention and choice. It uses eye-tracking to monitor the decision-making process, and examines differences between hungry and satiated individuals. The study also investigates whether these effects are moderated by the complexity of the decision environment, if the choice is between hedonistic and utilitarian options, and if the choice is within a food or a non-food category.



DATA MANAGEMENT AND CORPORA

Corpora are structured and often annotated collections of materials. The corpus server in the Lab is a facility for long-term, secure storage of such data. It functions both as an archive and as a collaborative workspace, with options for dynamic data management to upload, edit, and enrich data and metadata. Metadata are publicly visible, browsable, and searchable through the corpus browser, while the actual data are password-protected. Data access is granted by data owners/depositors at four access levels. The corpus server thus enables data discovery, and serves as a means to connect and collaborate with researchers responsible for relevant collections. The corpus server now comprises more than 5TB of annotated data.

In 2019, new data were added to the corpus server. The project *Repository and Workspace for Austroasiatic Intangible Heritage RWAAl* (Burenhult, Kruspe) was enriched by adding digitised large format maps dating back to the 1950s. These were scanned and georeferenced with Geographic Information Systems data (GIS data) to provide a contemporary geographical and environmental context. Similarly, the project *Language as key to perceptual diversity* (LANG-KEY; Burenhult) explores how languages express sensory experience with a focus on endangered speech communities in a multidisciplinary (Linguistics, Cognitive Psychology, Geography, History of Religion) and international (the UK, the Netherlands, Denmark, Switzerland, Mexico) approach. The project develops innovative field techniques such as the use of action cameras with built-in GPS for documenting spatial language and behaviour. The project has developed an approach whereby an audiovisual stream can be synchronised with geospatial (GIS) data on a shared timeline to allow annotations of audiovisually observed behaviour

to be linked, explored, and documented in relation to geographical coordinates (J. Larsson, Burenhult).

Together with the Language Archive Cologne, Germany, and the Language Bank of Finland, Lab members co-arranged the workshop *Challenges and Developments in Preserving and Publishing of Large Audio/Video Data* at the conference *Research Data and Humanities* in Finland (Frid, J. Larsson; see [Organisation of conferences, workshops, and symposia](#)). The purpose was to discuss future platforms for the archiving and publishing of datasets, corpora, and collections of audiovisual research data.

In 2019 the corpus server was also updated with new software to allow harvesting of metadata by so-called meta-archives. This means that any collection archived in the Lab can now also be discovered and explored in other archives around the world, such as in CLARIN's *Virtual Language Observatory* (VLO) and the *Open Language Archive Community* (OLAC).

AUDIO AND VIDEO FACILITIES

The LARM studio provides professional audio and video recording facilities as well as a set of musical instruments. In 2019, activities in the facility increased substantially. Some projects focused on method, such as the development of methods for field recording of audio, video, and GPS data in rural Mexico (Mesh). Another project focused on the recording and use of 360-degree video material (Tullberg, Roslund)

New research projects included a project at Malmö Academy of Music, which recorded flute playing sessions to examine musical learning as a relationship between the musician, the musical instrument, and the surrounding musical contexts (Tullberg; see p 12). A project in History

of Ideas and Sciences recorded and then animated the Bach piece *Trinity in Prelude, Fugue and Allegro* in the studio (Eklöf). The ongoing Wallenberg Scholar project *Embodied bilingualism* (M. Gullberg) continued to make audio and video recordings of adult second language learners and bilinguals to explore how speech and gesture interact. MA projects in Linguistics and Cognitive Semiotics recorded conversations between friends comparing speech, chats, and blog writing activities (K. Gullberg); or speakers in interaction with strangers, acquaintances, and friends to study changes in speech and gesture (Anderson). In collaboration with the EU-funded project *ArcheoBalt* (Gdansk, Aarhus, Lund, Bornholm), the studio produced a series of videos to present the archaeological excavations at Uppåkra. A video of newly arrived refugees and their language learning experiences was also produced in the studio to be shown at the international conference EuroSLA 29 (Granfeldt, Roslund, et al.; see [Organisation of conferences, workshops, and symposia](#)).

A range of projects made use of audio recordings, such as the project BLACKOUT (Bishop), the outreach projects *iGlobe* (Gren) and *Expedition: Reef!* (Arnadottir) at Vattenhallen Science Center LU, and media production for people with disabilities (Gomér, the company Bona Signum). The video editing facility was also used in projects at Design Sciences concerning multiplayer VR games, and a film about Syrian refugees in Europe (both Wessels). A Cognitive Science project studied how a blind audience experiences audio descriptions of visual events (Holsanova, R. Johansson).

Several scientific podcasts series were recorded in the studio such as the science podcasts of the Joint Faculties of Humanities and Theology (Degrell), Cognitive Science (Tärning, Tjøstheim; see p 11), Philosophy (Eriksson, Jöns-

THE PODCAST MYCKET HJÄRNA

Betty Tärning, Cognitive Science, Lund University | Björn Sjöden, Educational Science, Halmstad University | Kalle Palm, Secondary school-teacher in Malmö

The podcast *Mycket hjärna* started in 2019 with the purpose of combining Learning Sciences and teacher practice, and it is financed by one of LU's Thematic Collaboration Initiatives, 'Together Stepping into Tomorrow's Classroom' (Gulz). Podcast topics include neuromyths, multitasking, motivation, and so-called self-efficacy. The podcast can be found at, for instance, [soundcloud.com](https://soundcloud.com/poddtoppen.se) or poddtoppen.se.



WIND AND WOOD: AFFORDANCES OF THE SIMPLE SYSTEM FLUTE

Markus Tullberg, Malmö Academy of Music, Lund University

This PhD project studies musical learning as an interdependent and emerging relationship between the musician, the musical instrument, and the surrounding musical context. These relationships exist on various scales, from the direct and tactile interaction with the instrument in the moment of musical action, to the artistic activity that unfolds throughout a musical career. The study focuses on the simple-system flute, primarily developed as a product of 19th century Western art music, but now firmly established in other genres and traditions as well. In nine sessions six flute players created music, shared knowledge, and engaged in reflections about the experience of musical practice.



son), and History of Ideas and Sciences (Eklöf, Alkirwy). In addition, the studio was regularly used by national Swedish radio for interviews with researchers at LU (e.g., P1 Historia).

The studio was used for academic courses in Musicology (Olsson), Ethnology (Linander), History (Ottosson), Arts and Cultural Sciences (Fabricius Nilsson), and Theology and Religious Studies (Maurits, et al.) often in the form of podcasts. Three tutorials/workshops on audio recording were also organised in 2019 (Roslund).

The studio was also upgraded in 2019. A dedicated audio and video server were installed, funded through a generous donation from the Einar Hansens Allhemsstiftelse.

In 2019 written and filmed guides for how to use **the anechoic chamber** were updated. This facility was also used for teaching, for instance in Speech and Language Pathology. The project *Melody in human-cat communication* (MEOWSIC; Schötz) recorded speech stimuli for perception tests for cats. The anechoic chamber was also used for recording sounds in BLACKOUT, a project in performance art, in a collaboration with Stenkrossen, Lund, and the Inter Arts Center, Malmö (Bishop).

3D SCANNING, VIRTUAL REALITY (VR)

The use of 3D and Virtual Reality techniques continued to develop in 2019 with a focus both on data acquisition and method development.

Methodological work continued in the project *Visualising the assembly of the milky way - A virtual reality framework for interactive exploration of complex 3D data* (Lindgren), funded by the Strategic Research Area for e-Science, eSENCE. A collaboration between the Lab, Astronomy and Theoretical Physics, and Design Sciences (Davies, Agertz, Wallergård), the project seeks to create a framework for visualising any type of 3D data in Virtual Reality, whether stars in a galaxy, or 3D data from an archaeological excavation. In 2019 the framework consolidated into a three-part system with an input module for any 3D data, a core system that organises the data for visualisation, and an output module that enables users to choose what Virtual Reality equipment to use (e.g. a computer screen, a VR-headset, or a VR cube; Lindgren, Garde, et al.). In another explorative ini-

tiative within the eSENCE framework the Lab worked with the Royal Institute of Technology (KTH) to create an animated interactive visualisation of brain activity in 3D, where researchers can study how animated synapses are turned on and off (Garde, Lansner, Weinkauff, Fiebig).

In the *Hermione* project, the Lab (Lindgren, Landeschi), the department of Archaeology and Ancient history, and the Swedish Institute in Athens work to create a plan of the ancient city of Hermione, Greece. In 2019, the project tested different approaches for building a high-resolution 3D digital terrain model. The use of video data was also tested, since video has the advantage of creating a seamless combination of images automatically. Work in the monastery church at Vadstena also continued in 2019, in collaboration with Uppsala University and the Department of Technical Geology at LU among others (Lindgren, Lindqvist Sandgren, Ask, Rossi). In 2019 a 3D model of the 15th century church interior was created based on data from Ground Penetrating



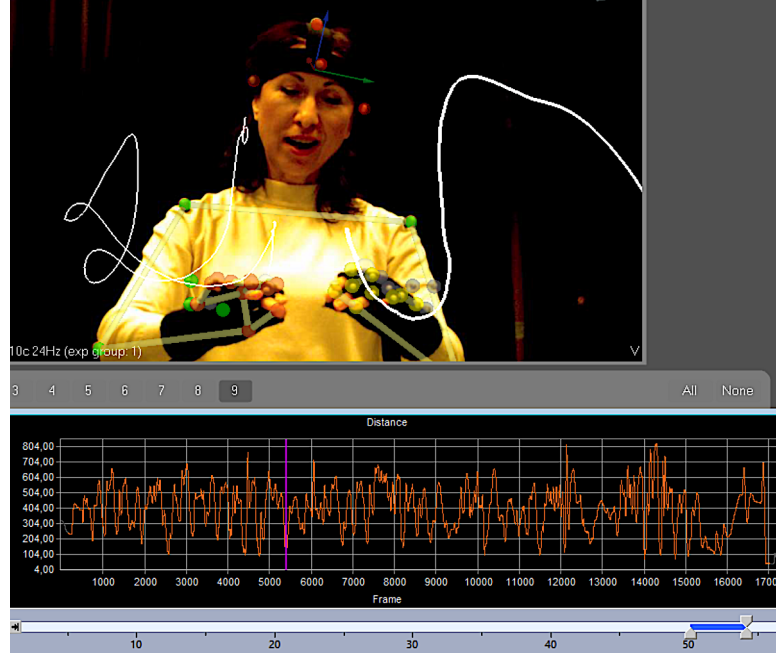
Radar (GPR), and work on interior details involved re-creating original colours on 3D scans of wooden sculptures. Various methods of 3D data acquisition were also tested at Rya kyrka (Roslund, Lindgren, Landeschi, C. Larsson, Dell'Unto).

Work with the Dept. of Biology also continued to develop methods for 3D documentation of small, geometrically complex objects, or objects made of materials that cannot be detected by laser scanners. For example, in 2019 the Lab worked with the Biological Museum to 3D scan a stuffed sturgeon (Foley).

Lab expertise on 3D scanning and 3D modelling was also engaged in regular academic courses such as Digital Archaeology (C. Larsson, Lindgren), and GIS (Landeschi). VR headsets and 360-degree videos were used in a course in Political Sciences (Möller Ölgård).

All 3D projects have benefitted from collaboration with the Lund University Center for Scientific and Technical Computing (LUNARC), which provides access to computational resources needed for heavy data processing. Access to super computers has significantly reduced the time of post processing of 3D data. Lab staff presented work at the annual meeting of the Swedish National Infrastructure for Computing (SNIC) 2019 (Landeschi), hosted by LUNARC. The meeting focused specifically on 3D data acquisition and integration through the use of high-performance computing infrastructure.

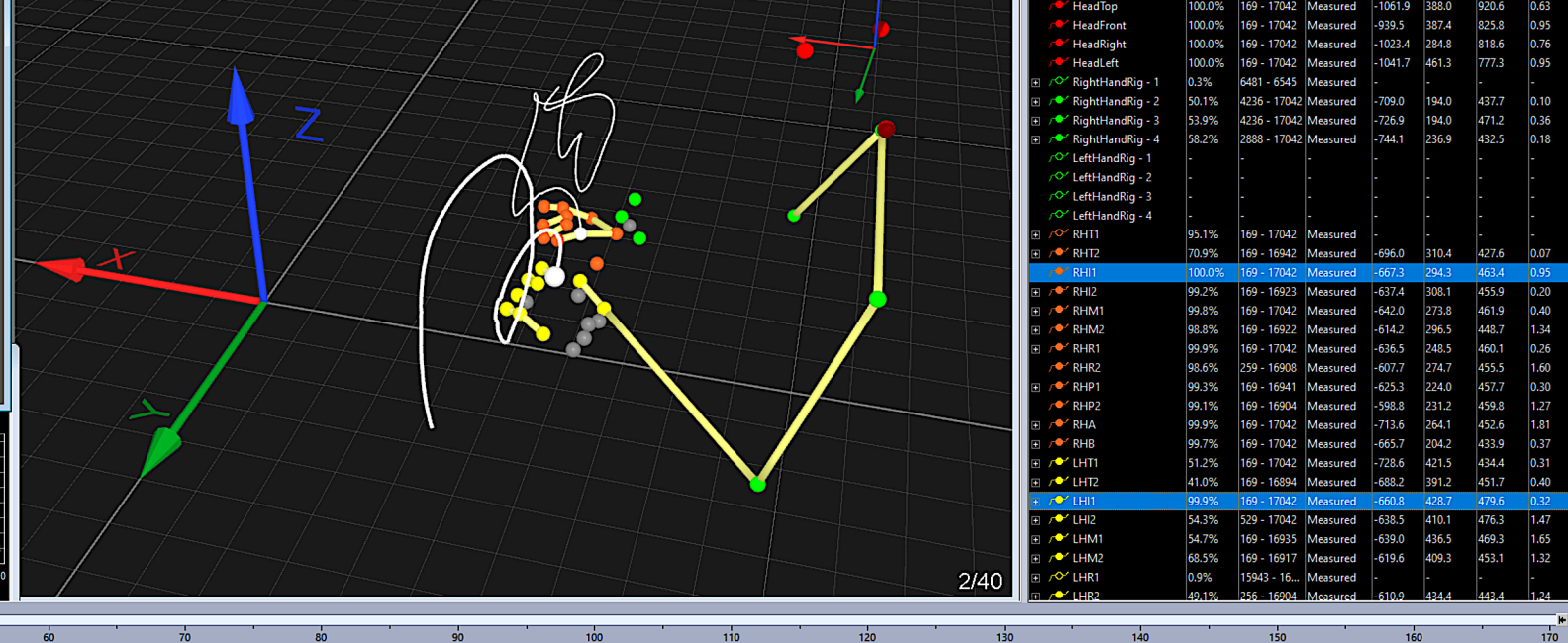
Finally, Lab member C. Larsson was awarded one of two six-month Offline Animation Residencies offered by the Creative Ireland Programme, overseen by the Irish government. Larsson spent six months in Ireland developing new skills related to 3D animation.



MOTION CAPTURE (MOCAP), VIRTUAL REALITY (VR)

Motion capture is another 3D technology that enables the recording of human bodily movements in 3D with high spatial and temporal resolution. The motion capture system consists of eight high-speed infrared cameras and a high-speed video camera linked to each other and a recording computer. The infrared cameras detect and record the 3D position of reflective markers strategically located on the moving individual's body.

New projects in 2019 included the EU-project *Cross-4Health*, a collaboration between Innovation Skåne and Kreativetsbanken. A subproject called *Virtual Recovery* aimed to develop a VR-app to train mobility in patients while also providing distraction (Egnér, Madsen, Nyman, Garde). Drawing on mocap recordings of physiotherapists, yoga experts, ballet dancers, and actors, a new improved work flow for mocap data was developed to allow full body skeleton motions to be immediately imported into game machines. This allows researchers to immediately evaluate the quality of a recording before



even leaving the mocap studio (C. Larsson, Garde). In an explorative initiative with the Royal College of Music, mocap data was also recorded to examine the link between musical scores and conductors' movements (Garde, Timoshenko), and in another new project with Malmö Art Academy and Kristianstad University, actors were recorded with mocap to create a database of people's movements as they move through a city (Edström, M. Johansson).

Continuing projects include a study that examines the coordination of eye and hand movements when people solve crossword puzzles (Strömqvist, van de Weijer, Garde) which combines eye-tracking and mocap data. Existing workflows for eye-tracking and mocap were developed to allow them to be combined, and new software scripts (*Python* and *R*) were developed. The Wallenberg Scholar project *Embodied Bilingualism* (M. Gullberg) continued its use of motion capture and VR to build databases of speech-gesture profiles of native and non-native speakers of different languages to probe issues of bimodal language processing. A related PhD project (Nirme; see

p 19) developed a work flow for how to create virtual speakers based on mocap recordings, which can then be used as an experimental platform.

The Lab offered tutorials on how to work with motion capture (Nirme), and demonstrated the facility to students of Architecture (Landeschi, Garde), and students from the SAXO Institute, Denmark (Landeschi, Garde, E. Andersson).

A generous donation from Einar Hansens Allhemsstiftelse awarded in 2019 will enable an upgrade of the motion capture systems, software and server solutions.

ARTICULOGRAPHY

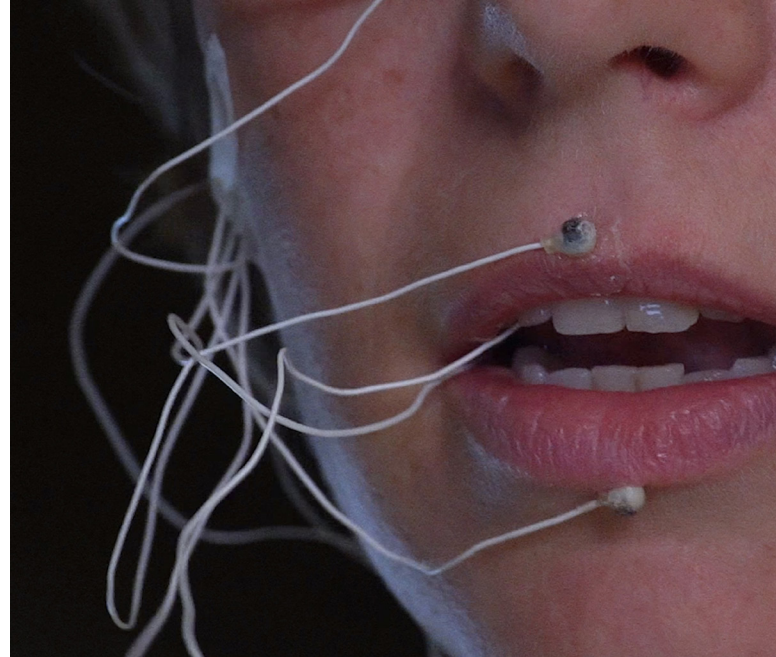
The Lab hosts electromagnetic articulography (EMA). This technique records the movement of the tongue, the lips, the jaws (so-called speech articulators) in 3D with high spatial and temporal resolution through sensor coils in an electromagnetic field. In 2019 the EMA facility updated checklists, prompting scripts, and user guides (Schötz, Frid).

Research using EMA included a PhD project in phonetics exploring the movements of the jaw during the articulation of Swedish word accents (e.g. *anden* vs. *anden*) (Svensson Lundmark, Frid). The project *PROGEST*, a collaboration between Lund, the Royal Institute of Technology (KTH), and the Linnaeus University, examined the coordination of speech articulation and head movements and found robust links between up- and downward head movements and prosodic boundaries (Frid, Svensson Lundmark, Ambrazaitis, Schötz, House). The combination of articulography and optic motion capture were also explored (Frid, Schötz, Lindgren, C. Larsson). EMA was used in the teaching of Phonetics, and Speech and Language Pathology (Schötz).

EYE-TRACKING

In 2019 eye-tracking was engaged in a range of projects, training and outreach events, across many different disciplines, in national and international collaborations. The facility's hardware and software solutions were also upgraded.

Eye-tracking was used in projects for example in Cognitive Science to investigate visual search in moving displays to enhance teaching materials for students with attention disabilities (Westelindh, Zermiani); how hunger influences decision making (Gidlöf, Wallin; see p 9); and whether people are aware of when their eye movements fail to reach their intended goal (Roszko). In a collaboration with Computer Science at Malmö University, student projects investigated how Virtual and Augmented Reality (VR, AR) can be combined with eye-tracking (Pederson). A project in European Studies used eye-tracking to study how agreement in social media posts affects attention to news on social media (Dutceac Segesten, Niehorster, Bosetta, Holmberg).



Many projects focused on the inner workings of eye movements, and on eye-tracking methodology. For example, one project examined the so-called 'quiet eye' effect whereby experts look longer at a target than novices just before acting, such as just before hitting a golf ball (Dahl, Nyström). Other projects studied so-called microsaccades (Nyström, Niehorster, Hooze, R. Andersson); whether eye-tracking glasses provide robust data in real world scenarios (Niehorster, Nyström, Hooze, Santini, Kasneci, Hessels); the effect of stress on pupil dilations in police work (Bertilsson, Nyström, Niehorster, Fransson); vergence, that is the simultaneous movement of the pupils towards or away from one another during focusing (Nyström, Hooze, Hessels); and nystagmus, a condition in which the eyes make repetitive, uncontrolled movements, leading to reduced vision with effects on balance and coordination (Rosengren, Nyström, Stridh, Hammar).

Several projects examined memory, such as the relationship between gaze behaviour and episodic memory retrieval (R. Johansson, M. Johansson); the relationship

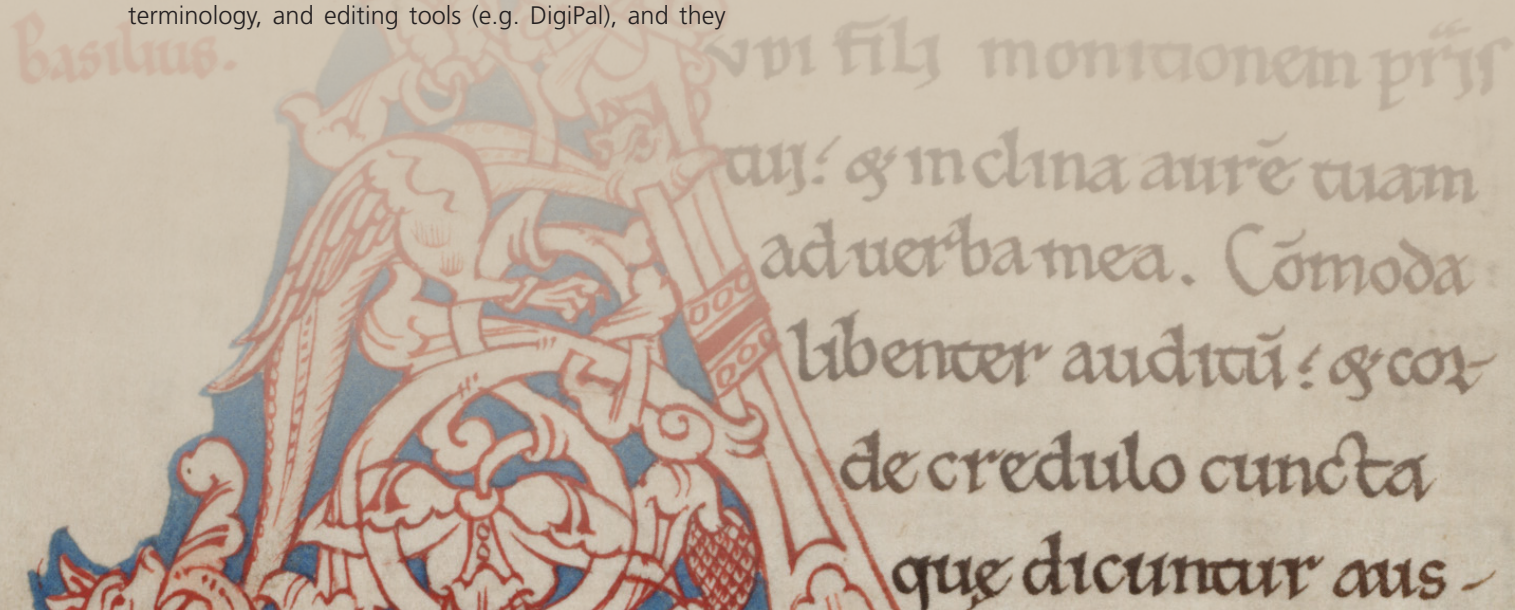
Digital tools for text transcription, encoding and visualisation

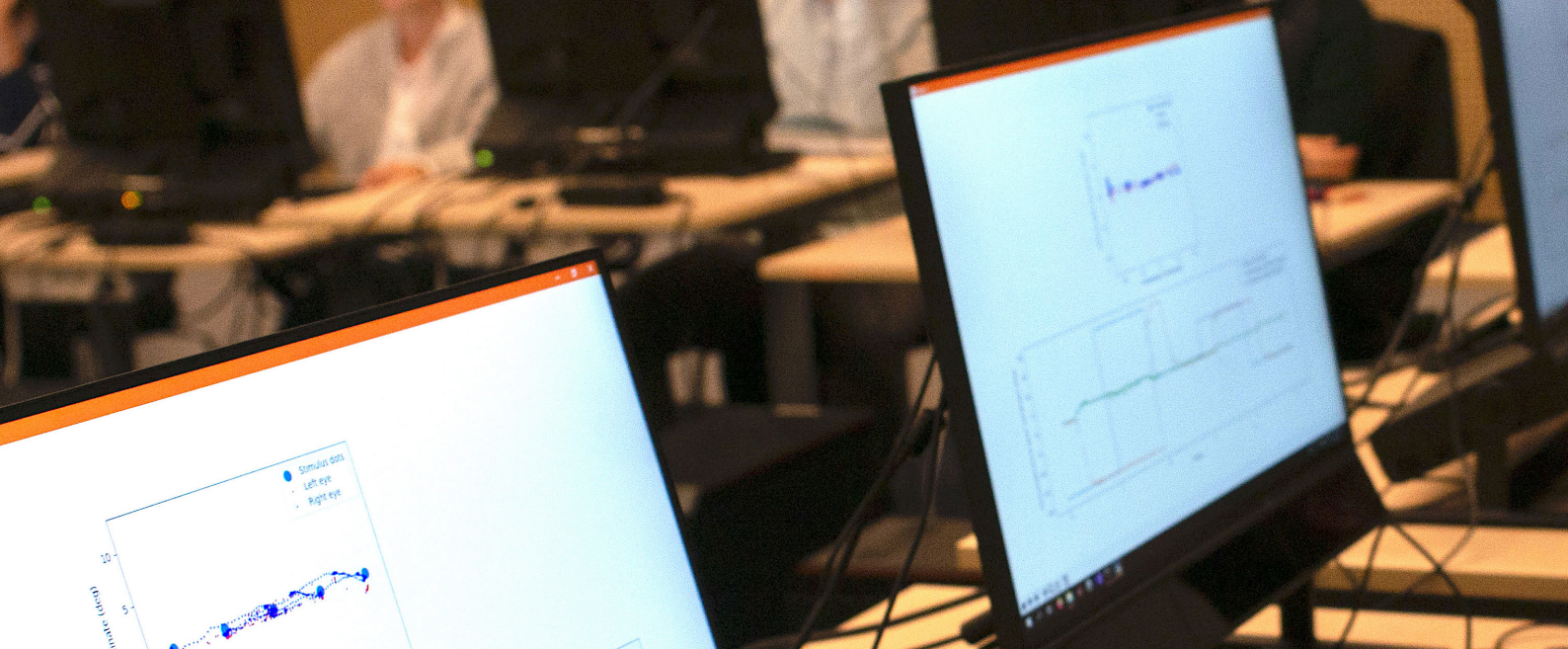
Scholars in the Humanities must often deal with old manuscripts and texts that are not in computerised, easily searchable formats. The workshop *Digital tools for text transcription, encoding and visualisation* introduced methods and tools for dealing with these challenges. The workshop was a joint venture between the Humanities Lab and the Centre for Theology and Religious Studies (Göransson; host and speaker), with further invited speakers from the Ca'Foscari University of Venice, Italy (Buzzoni, Cugliana), and the Centre for e-Humanities in Cologne, Germany (Cugliana).

During the workshop, participants were introduced to different tools for transcribing manuscripts (Transkribus, T-Pen, OCRopus), for encoding text to make it machine readable (with the Text Encoding Initiative, TEI, and Oxygen), and for visualising texts (Edition Visualization Technology, EVT 1 and 2; also customisations of TEI in projects). They were also introduced to medieval scripts, terminology, and editing tools (e.g. DigiPal), and they

received an overview of different types of editions and text editing methods with links to resources. The workshop included hands-on exercises with the new tools.

In total, the workshop had 23 participants, including students, PhD students, junior and senior scholars, librarians, and archivists from various disciplines (e.g., French, Spanish, Economic Demography, Economic History, History, Cultural Studies, Book History, Media and Communication Studies, Latin, Practical Theology, Church History, Classical Greek, Latin, Scandinavian Languages, Linguistics, and Language and Speech Pathology). The participants also represented a wide range of institutions (from Denmark: the Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation; the Royal Library; the University of Copenhagen; from Sweden: Lund University, including the Lund University libraries; the Linnaeus University, Växjö; the Swedish National Archives).





between emotional content, viewing behaviour, memory encoding, and memory experience (R. Johansson, Nyström, Schönfeld); and what pupil size reveals about listening effort and language proficiency in primary school (Brännström, Carlie, K. Andersson, Gulz, R. Johansson, Sahlén).

A new project received funding from the Crafoord Foundation to strengthen research in Psychology, Neuroscience, and Clinical Sciences combining MRI brain imaging and eye-tracking at the national 7T facility at the Lund BioImaging Center (Niehorster, Nyström, Mårtensson, et al.).

National and international engagements also included presentations at leading conferences in the field, such as the European Conference on Eye Movements (ECEM) (Niehorster, Nyström), where Lab members also organised a symposium on eye-tracking in virtual and real worlds (Niehorster). Lab members also gave invited talks and lectures at the Royal Institute of Technology (KTH) in Stockholm (Nyström), and in Germany (Nyström).

Further, Lab members presented eye-tracking methodology at the company SmartEye AB, Gothenburg (Niehorster, Nyström). Members also co-organised a workshop with Malmö University and Rochester Institute of Technology (RIT), USA, discussing how eye-tracking can be used to study ethnic relations (Nyström), and a workshop on imaging of the visual system with Skåne University Hospital and Lund Bioimaging Center (Niehorster; see [Organisation of conferences, workshops, and symposia](#)).

Other activities included a seminar series on eye-tracking with both Swedish and international speakers, and regular supervision and consultation sessions with users locally, nationally, and internationally (see [Collaborations](#)). Eye-tracking was also used in teaching and training. The Lab course on Eye-tracking (7.5 ECTS) was given twice, and a new commissioned course, A practical introduction to eye-tracking (1.5 ECTS), initiated in 2019. Lab members also taught eye-tracking in Biomedical engineering at Lund University, and at Åbo Academy, Finland (Nyström).

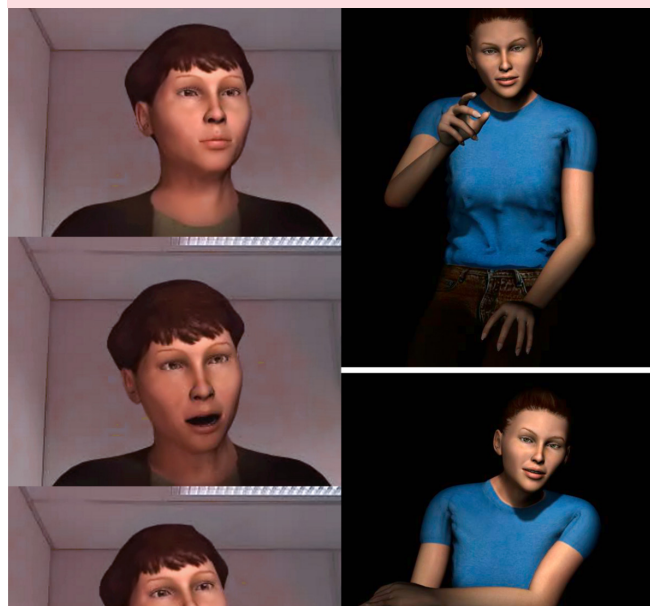


In 2019 work continued to improve the usability of the facility. The Digital Classroom was upgraded with a new network solution, a new storage and project management server, and a dedicated firewall solution enabling safe experiments relying on the internet. New experimental stations were also installed. All upgrades were generously funded by the LMK Foundation. The upgrades allow researchers to simultaneously deploy identical experimental environments to all stations, and different users can easily maintain separate experiments with full control over their setups. Software solutions were developed in parallel, specifically tools to integrate stationary eye-trackers with other presentation software (e.g., *Psychtoolbox*, *PsychoPy*) (Niehorster, R. Andersson, Nyström), and tools allowing for in-depth analysis of data from eye-tracking glasses (Niehorster, Hessels, Benjamins). The tools developed are freely available at the online software archive [GitHub](#).

UNDERSTANDING VIRTUAL SPEAKERS

Jens Nirme, Cognitive Science,
Lund University

This PhD project addressed how language comprehension is affected by seeing the speaker, with a particular focus on animated virtual speakers made using motion capture. Findings show that seeing a speaker facilitates comprehension, they clarify the role of timing in speech-gesture integration, and demonstrate that virtual speakers based on motion capture are viable as research instrument. The thesis also discusses the implications of these findings for the design of computer based educational applications.





ELECTROPHYSIOLOGY

Electrophysiological measurements of brain activity (EEG, ERPs) were predominantly used in projects examining language and language learning. For example, event-related potentials (ERPs) were used to investigate how German and English learners of Swedish handle the Swedish verbs *sätta* 'set', *ställa* 'stand', *lägga* 'lay' in comparison to native Swedish speakers (A. Andersson, Blomberg, M. Gullberg). Continued work led by a Wallenberg Academy Fellow (Roll) investigated how and how quickly second language learners can use Swedish word accents to predict word endings like native speakers (Roll, Horne, Hed, Schremm, Novén). A

MA thesis investigated how Swedish word accents are processed (Kochančikaitė, Roll), and a PhD project examined how German and Swedish learners deal with tone in a new language, revealing benefits if it is also present in the first language (Gosselke, Horne, Shtyrov, Roll). Two projects used the technique to examine how Swedish speakers process quantified expressions such as *några studenter* 'some students' vs. *få studenter* 'few students' (Heinat, Klingvall). A PhD project in English defended in 2019 studied how native speakers of English process negated sentences compared to positive ones when reading and listening (Farshchi, Paradis, A. Andersson).

MAGNETIC RESONANCE IMAGING (MRI)

[Lund University Bioimaging Center](#) (LBIC) hosts state-of-the-art MRI facilities to study brain anatomy and brain function. In 2019 the Lab's MRI liaison officer (Mårtensson), with a joint position in the two units, continued to forge stronger links between the Lab and LBIC. LBIC and Lab staff worked together on the installation of an eye-tracking system in the National 7T Facility at LBIC. The combination of eye-tracking and MRI opens new ways to study and control attention while examining brain function. An MRI course, developed and intended for participants with no medical background also ran for the first time in 2019 (Mårtensson). New research projects in Psychology set to launch in 2020 investigate, for example, the neural underpinnings of perceived language anxiety in foreign language students (Abendroth, Mårtensson), and brain activity in highly suggestible individuals under hypnosis (Lindström, Cardeña).

BIOPAC

The BioPac system measures a person's psychophysiological reactions to events in the surroundings such as loud sounds or visual input. The current system consists of a galvanic skin response unit, a respiratory unit, and a heart rate variability unit. In 2019, the system was updated with a new version of the analysis software *AcqKnowledge*, and a new laptop running Windows 10. The Biopac system was also allocated dedicated space in the Lab to enable a fixed experimental setup. A MA project in Cognitive Semiotics was initiated investigating the experience of dance (Chikhladze Woxell, Zlatev, van de Weijer). The system was also used in teaching in Psychology (Kekecs) and Linguistics (van de Weijer).



HIGHLIGHT: NEW LAB MEMBER 2019

KATE MESH | Marie Skłodowska-Curie Postdoctoral Fellow

I'm a linguist studying how hearing people gesture while they speak, and how deaf people adapt many of these gestures, and use them in young sign languages that are just now being created. My research is field-work-based and centered in Mesoamerica, where I have worked for the past 9 years.

In 2019 I joined the Humanities Lab on a Marie Skłodowska-Curie Individual Fellowship, with a postdoc project called *References to Environments are Coordinated to be Heard and Seen (REaCHes)*. The project investigates how people describe their surroundings when they are on the move, and while they are performing navigational activities. For our first study we used action cameras to record speakers of Chatino (an indigenous Zapotecan language of Mexico) using speech and gestures while wayfinding on mountainous trails. Our goal for the coming year is to compare Chatino strategies with those of speakers in European countries, including Sweden!

MULTIMODALITY

Multimodal analysis of human behaviour (e.g., speech, gesture, head movements) continued to grow rapidly as a domain of investigation. The LARM-studio was often used for video recordings, but video was also recorded in the field. The video annotation software ELAN was used to transcribe and annotate multimodal behaviour (tutorials offered by Graziano; see [Training, teaching, consultations](#)). Motion capture and other sensor-based techniques such as the use of electromagnetic articulography were also explored.

A range of studies examined crosslinguistic and cross-cultural aspects of speech and gestures. For example, MA projects investigated how Swedish and Russian speakers react to multimodal expressions of impoliteness (Zlov, Zlatev, M. Gullberg), how Danish speakers speak and gesture about colour (Amsen, M. Gullberg), the effect of familiarity on gesture frequency in interaction (Anderson), and possible gender differences in spoken and gestured expressions of agreement and disagreement

in Greek (Rozou, M. Gullberg). A PhD in Linguistics, defended in 2019, examined how speech and gesture jointly form cohesive discourse in German (Debreslioska, M. Gullberg, Graziano). A Marie Skłodowska-Curie Individual Fellowship launched in 2019 examines the use of demonstratives in speech (e.g. *this/that*) and pointing behaviour with hands, heads, and lips in speakers of Eastern Chatino, Mexico (Mesh). Work on differences between Swedish and Italian multimodal behaviour also continued (Graziano, M. Gullberg). The project PROGEST (see also [Research/Articulography](#)) continued to examine the synchronisation of head movements and speech using articulography data, and acoustic and video analysis (Frid, Svensson Lundmark, Ambrazaitis, Schötz, House).

Other projects focus on multimodality in language acquisition or bilingualism. M. Gullberg's Wallenberg Scholar project *Embodied bilingualism*, funded by the Wallenberg Foundations, continued to examine how native speakers process language learners' speech and gestures, especially in cases where the learners' gestures do not match those of native speakers. The project deals with a range of language-gesture pairings, including Swedish, German, English, French, Turkish (Christensen). Another project with the University of Concordia continued to probe the effect of gesture on the comprehensibility of a language learner's speech (Graziano, Trofimovich). A new joint project with University College London, funded by the Leverhulme Foundation, launched in 2019 to examine whether adults can break into sign language after only a few minutes of exposure and with no training (Marshall, Janke, M. Gullberg).

A new international network dedicated to the study of gestures and head movement in language (GEHM), led from the University of Copenhagen, also launched in 2019 with Lab members as active participants (M.





Gullberg in the steering committee; Graziano, Frid; see [Collaborations](#)).

KEYSTROKE LOGGING

Keystroke logging is a technique that enables the recording of a writer's keyboard and mouse activities during text production keystroke by keystroke. The writing session can be replayed and analysed in detail to show how the process of writing may differ from the final text. The keystroke logging tool, ScriptLog, has partly been developed and maintained by Lab members. Keystroke logging can be combined with other measurements such as eye-tracking (Frid, V. Johansson, Wengelin, R. Johansson). In 2019 a contribution from the *Linnaeus Centre Cognition, Communication, and Learning* enabled further development to combine ScriptLog with more types of eye-trackers. In a collaboration with KU Leuven, Belgium, keystroke logging and eye-tracking were combined with audio recording to capture the gaze behaviour and joint attention of two collaborative writers during emerging text composition

(V. Johansson, Frid, van Steendam, R. Johansson). The program's elicitation functions were further developed in a project with the University of Antwerp, Belgium, combining writing and picture naming (Meulemans, Frid). A PhD project at the University of Gothenburg used keystroke logging to investigate writing processes in patients with post-stroke aphasia or low-grade glioma (Johansson-Malmeling, Henriksson, Wengelin, Frid). A new project, funded by the Marcus & Amalia Wallenberg Foundation, aims to study how invented and self-experienced narratives differ in speech and in writing (V. Johansson, R. Johansson).

Keystroke logging was also demonstrated in several courses at undergraduate and graduate levels in Linguistics and in Speech and Language Pathology.

OTHER

Reaction time experiments continued to be used for a range of purposes. For example, a MA project in Cognitive Semiotics examined how people respond to multi-modal expressions of impoliteness (Zlov, Zlatev). A PhD project in Italian probed how Italians who have lived for a long time in Sweden interpret pronouns (e.g. *she*, *he*) (Gargiulo). Another project examined how pantomimed (gestured) stories were interpreted by onlookers and whether some orders of elements were more difficult to understand than others (Żywiczyński).

A new project, the *LANG-TRACK-APP*, funded by the Marcus & Amalia Wallenberg Foundation, was also initiated in 2019 (Granfeldt, M. Gullberg). The project develops a **smartphone app** to track when, where, and how often language learners are exposed to and use the language they are trying to learn outside of classrooms. The project compares Swedish students going abroad to learn a foreign language with individuals newly arrived in Sweden learning Swedish.

Data from **Geographic Information Systems (GIS)** and **Global Positioning Systems (GPS)** also gained important ground in 2019. In language studies, the *RWAAI* project (cf. **Text-Language resources**, *Swe-CLARIN*; Kruspe, Burenhult), digitised maps georeferenced with GIS data. *LANG-KEY* (Burenhult) also used action cameras with built-in GPS for documenting spatial language and behaviour. Similarly, a Marie Skłodowska-Curie Individual Fellowship (Mesh) used GPS-GIS data integration exporting and visualising geodata in a GIS-like environment. In Archaeology new work flows were tested for importing 3D volumetric data derived from Ground Penetrating Radar (GPRS) acquisition into GIS systems (Lindgren, Landeschi). Lab member Landeschi also gave tutorials on GIS/GPS data.



Collaborations

Lund University Humanities Lab and its members have thriving local, national, and international collaborations and networks. Those linked to individual scholars are too numerous to list here, but the Lab also has many institutional collaborations.

LOCAL. The Lab has numerous local collaborations across Lund University. Some are longstanding such as with the departments of Linguistics, Archeology, Cognitive Science, Design Sciences, Biomedical Engineering, the Strategic Research Areas for e-Science eSENCE, LU Center for Scientific and Technical Computing (LUNARC), etc. Newer collaborations include joint work with the Dept. of Clinical Sciences (Björck, et al.), the Centre for Theology and Religious Studies on the treatment of ancient texts (Göransson), joint equipment with the Dept. of Biology, new links to the infrastructure *Correlative Image Processing and Analysis (CIPA)* at the Medical Faculty, and to the network dedicated to artificial intelligence, *AI Lund*, etc. New initiatives also include engagement in a LU Thematic Collaboration Initiative, *Intelligent intelligence* (Political Science, Petterson) where linguistic analyses of how people talk, write, read, and listen were provided by Lab members (V. Johansson, van de Weijer). A related Advanced Study Group at the Pufendorf Institute for Advanced Studies, *In the interest of the nation*, brought together experts from the Lab, Linguistics, Phonetics, Psychology, Intelligence Studies, Law, and Human Rights Studies (Frid, van de Weijer, V. Johansson).

In the domain of e-Science, local collaborations have substantially intensified (see below under National collaborations). Similarly, collaborations with Lund University Bio-imaging Center have also intensified through our liaison

officer (Mårtensson) with a double appointment at both units to facilitate and boost the use of and training in brain imaging techniques. In 2019 Mårtensson and other Lab members oversaw the instalment of an eye-tracker in the 7T facility at LBIC, and Mårtensson also taught a newly developed course on MRI for participants without a background in medicine, to recruit new users and forge stronger connections between the Humanities Lab and other groups at LU interested in the brain.

NATIONAL collaborations are numerous. The Lab is a node in the national consortium [Swe-CLARIN](#), itself part of [CLARIN](#), the European Common Language Resources and Technology Infrastructure. Swe-CLARIN links nine Swedish institutions around issues of language technology, including the *Swedish National Data Service (SND)*. As a national node and an accredited *Knowledge Centre*, the Lab provides tools and expertise related to language archiving, corpus and (meta-)data management, assistance with sensor-based methods, and speech and language technology. The local coordinator (Frid) was involved in a range of projects in 2019 (see [Research](#)) in addition to consulting on issues of language technology.

The Lab also continued and intensified its partnership with [eSENCE](#), the national Strategic Research Area and programme in e-Science, involving the universities of Uppsala, Lund, and Umeå. The overall enterprise focuses on the development of tools for handling, storing and retrieving research data in digital form. Gullberg is a member of the Lund steering committee. Data flows, large databases, heavy data computation, and data visualisation, achieved with the assistance of LUNARC, the Lund University Center for Scientific and Technical Computing (Gullberg member

of the executive board) are core elements. An ongoing collaborative project funded by eSSENCE, aims to develop a general framework for using Virtual Reality to visualise any 3D data set (see [Research/3D data](#), [Motion Capture](#), [Virtual Reality](#)) under the leadership of Lab member Lindgren, with participants from the Lab, Astronomy and Theoretical Physics, and Design Sciences. Lab members also started to collaborate with other nodes in the eSSENCE network in 2019 (e.g. Garde). Lab members also regularly contributed to [COMPILE](#), a common website for research, education, and infrastructure related to Science and e-Infrastructure at Lund University.

The Lab was also deeply involved in issues concerning research infrastructures in 2019, both specific to the Humanities and more generally. The Lab continued its collaborations with [Humlab Umeå](#), specifically in a joint bid to the Swedish Research Council's call for a Needs Inventory of Research Infrastructure of National Interest 2019. The bid, *SweHumLabs*, aims to create a distributed national infrastructure for the Humanities and Social Sciences exploiting the complementary competence and expertise across the two labs and their long experience of infrastructural work. The Lab also participated in two other bids, one for a Swedish membership in the European consortium *Digital*



Research Infrastructure for the Arts and Humanities (DARI-AH-EU), led by the Linnaeus University, and one for a *National Research Infrastructure for Visualisation of Data (InfraVis)* led by Chalmers University of Technology with other LU members being Astronomy and Design Sciences. The joint applications further strengthened links to other units for infrastructures such as the Swedish National Archives, the Centre for Digital Humanities Gothenburg, the Royal Library, etc. The Lab further participated in a national hearing concerning the Government's Research Policy (*Forskningsspolitiska Dagen*), organised by the Swedish Research Council, where Gullberg was an invited speaker on the panel entitled *Research infrastructures – digital possibilities and challenges*.

INTERNATIONAL. The Lab has several international collaborations. For example, in the field of 3D scanning, the Lab has several collaborations through its members (Lindgren, C. Larsson, Landeschi). These networks include the *Centre for Textile Research* in Copenhagen, Denmark, the *Swedish Institute in Athens* and *CNR-ISTI* in Pisa. In the domain of eye-tracking, long-standing collaborations with universities in the Netherlands, Germany, and Finland continued to flourish and involved both sharing of skills in training, and research activities in 2019. In the area of language documentation, data management and corpora, the long-standing collaboration with the *Max Planck Institute for Psycholinguistics* and *The Language Archive (TLA)* hosted there. The Language Archive develops software and archiving solutions for the Humanities and languages in particular. Continued connections to the *Endangered Languages Archive* at the School of Oriental and African Studies at the University of London also continued, as well as connections within CLARIN ERIC. In the domain of multimodality, a new international network *Gesture and Head Movements in Language* (GEHM) launched in 2019, funded by the Independent Research Fund Denmark (Paggio),

linking the Universities of Copenhagen, Lund, Linnaeus, KTH, Leuven, Kiel, Barcelona, and Trinity College Dublin. The purpose is to strengthen research on multimodal language use, to forge new research constellations, and organise training events across specialisations that can benefit students and junior scholars across the sites.

Moreover, the Humanities Lab is a partner in a number of international centres such as the *Centre for Multilingualism in Society across the Lifespan*, Oslo; *Advanced Studies on Language complexity*, Lyon, France; and *DigHumLab* Denmark, the Danish national consortium for digital humanities. In 2019, the fourth conference of the association of Digital Humanities in the Nordic Countries (DHN) was held at the University of Copenhagen, and Lab members attended and presented work there (Frid, M. Gullberg).

The Humanities Lab continues to host many visiting scholars from all over the world for both short- and long-term stays (see *Visitors*). These visiting scholars contribute to the environment by generously giving guest lectures and engaging in scholarly exchange with the whole environment. Of particular note for 2019 are visitors from South Africa as part of a bilateral project funded by The Swedish Foundation for International Cooperation in Research and Higher Education (STINT) entitled *Unravelling the bilingual mind* (M. Gullberg, Bylund). Lab members also regularly visit other institutions and give invited scholarly talks about their own research both within and outside Lund University (see *Invited talks and guest lectures*). These activities contribute in important ways to forging new connections and networks.

Training, teaching, consultations

Training constitutes an important part of the Lab's activities. Training activities include PhD courses, group tutorials, individual and group consultations, and guest lectures. These are adjusted according to topics, needs, and audiences. The goal is to facilitate and increase users' access to the technological resources that require advanced methodological skills, and to enable interdisciplinary work within and across faculties. Throughout the year, Lab members are engaged in a number of training activities in areas such as eye-tracking, visualisation of 3D data, programming, audio and video recording, statistics for the behavioural sciences, and data geo-referencing.

PhD courses run over a number of weeks, and focus both on broad methodological approaches such as programming or statistics, and on specific research technologies, such as eye-tracking. Courses include practical hands-on elements as well as theoretical and methodological components. In 2019, the Lab offered 4 PhD courses, two on *eye-tracking*, one on *statistics*, and one on *programming for the behavioural sciences*. In total, 43 participants took part in these courses representing Lund University, but also the Linneaus University; Mälardalens Högskola; Stockholm University; Malmö University; Copenhagen Business School, Denmark; Nicolaus Copernicus University, Poland; Helsinki University, Finland; and the University of Amsterdam, the Netherlands.

Group tutorials were also offered on several topics. The tutorials are often dedicated to issues of data collection, or to specific pieces of software. In 2019 13 tutorials were offered on audio and video recording in the LARM

studio, *ELAN*, *PsychoPy*, *RTK GPS* and data geo-referencing, *R* for non-statistical uses, 3D scanning, and Motion capture techniques.

Individual and group consultations are important training activities. They offer Lab users targeted advice on specific research problems and are often related to the use of specific software, technologies or analysis methods. In 2019, 168 such consultations were provided. Areas covered included statistical and methodological advice (van de Weijer, Frid), audio/video recording and editing, podcast production (Roslund), the Biopac system (van de Weijer), web surveys (van de Weijer), text analysis and visualisations (Frid), text mining and social media (Frid), GPS-equipped action cameras (J. Larsson), motion capture (Garde, Nirme), 3D-visualisation of data (Garde), recording of 3D data (Landeschi, Roslund), EEG and ERP setups and analysis (Garde), Virtual Reality visualisation (Garde). In addition, many consultations concerned specific software and adaptations to specific research projects. In 2019 consultations were provided on the software *R* (van de Weijer), *E-prime* (van de Weijer), *ELAN* (Graziano, Garde), *ScriptLog* (Frid), *PsychoPy* (Garde), and *MATLAB* (Garde).

Importantly, the Lab was also consulted on strategic issues concerning infrastructures, for example by the Medical faculty at LU and the Forum Medicum Movement and Reality Lab (MoReLab) concerning content, and by financial officers from Social Science departments all over Sweden concerning administrative solutions.

In 2019 the Lab also introduced *Meet the experts*, opening its doors to visitors once a month for a 2–3 hours drop-in consultation. The event was advertised in the uni-

versity channels. The topics included *Eye-tracking and Experimental Setup*, *Video and Sound Recording in LARM*, *Motion Capture and Virtual Reality*, *Transcription and Multimodal Analysis and ScriptLog*, *Electrophysiological Responses and Biopac*, *Anechoic Chamber and Articulography*, and *Language Documentation and Corpus Server*. Participants came from several faculties at Lund University.

Seminars and workshops are also an important part of the training events. In 2019 this included a seminar series on eye-tracking with both national and international speakers, and two workshops. A workshop co-organised with the University of Copenhagen was dedicated

to motion capture (see **Organisation of conferences, workshops, and symposia**), another to *Digital tools for text transcription, encoding and visualisation* (see p 17). Further to this, lectures were given on structural and functional neuroimaging (Mårtensson).

A new **commissioned course**, *A practical introduction to eye-tracking*, were given twice in 2019 (Nyström, Niehorster). Participants came from all over the world. Lab facilities were also part of laborative modules and training in regular academic programmes (see **Research for each facility**).





Visibility, access, outreach

As every year, the Humanities Lab hosted multiple events for local, national and international visitors across a range of domains. In 2019 a total of **50 tours and demos** were organised often including concrete demonstrations of ongoing research and hands-on elements. Among the local recipients were the Lund University think tank *LU Futura*, the leadership of the Joint Faculties of Humanities and Theology, Corporate Communication at LU, researchers from the Department of

Health Science at the Medical faculty, and a so-called Advanced study group from the Pufendorf Institute for Advances Studies. As in previous years, the Lab also offered introductory tours and demo sessions to undergraduate and postgraduate programs. Teachers and supervisors are always encouraged to participate in these events. National guests included the Minister of Higher Education and Research, Matilda Ernkrans, the Wallenberg Foundations, the Scientific Council for Humanities

and Social Sciences at the Swedish Research Council, the company Ubisoft, the national meeting of all Medical faculties in Sweden, to mention a few. Lab tours were also given to international visitors from, among others, the Universities of Toronto, British Columbia, Denver, Oslo, Göttingen, Zurich, Valdosta State, Oxford, Rome, Venice, Bethlehem, U. Nicolaus Copernicus, Poland, and Jordan University of Science and Technology.

The Humanities Lab further organised and participated in several [conferences and workshops](#) in 2019. This included the 29th annual conference of the European Second Language Association, EuroSLA 29 (Gullberg; see p 7), the biggest conference in the world dedicated to second language acquisition. Several workshops focusing on eye-tracking were organised and hosted by Lab members at local and international events (see [Research/Eye-tracking](#) and [Organisation of conferences, workshops, and symposia](#)), such as the ECEM conference (Niehorster), a workshop about imaging the visual system (Niehorster), and a workshop on how eye-tracking can be used to study ethnic relations (Nyström). Another workshop targeted challenges and developments in preserving and publishing large audio and video data (Frid, J. Larsson, see [Research/Data management](#) and corpora, and [Organisation of conferences, workshops, and symposia](#)). Finally, the Lab also hosted the workshop Digital tools for text transcription, encoding and visualization (Göransson; see p 17).

Lab members also gave a number of [invited talks](#) in academic and in popular science contexts. Many of the talks demonstrated technologies and activities in the Lab, as well as research. For instance, the Lab participated with demos at the popular Humanity and Theology Days (*HT-dagarna*) organised annually by the Joint Faculties of Humanities and Theology. Lab members gave

talks on topics such as speech and gestures (Graziano, Gullberg), phonetics (Schötz), cat communication (Schötz), second language acquisition and bilingualism (Gullberg), eye-tracking and eye movements (Nyström, Niehorster), on writing processes (V. Johansson), and crosslinguistic differences in so-called factive verbs (van de Weijer), among other things. Other talks concerned infrastructures for the Humanities and Social Sciences (Gullberg), and academic freedom (Gullberg).

Lab members also appeared in the [media](#). For example, members were interviewed in Lund University's staff magazine, *Lunds Universitets Magasin (LUM)*, about a new linguistic corpus of contemporary spoken English (V. Johansson), endangered languages (Burenhult), and in the Lund student paper *Lundagård* about motion capture (Garde). The popular science website *forskning.se* published an article about whether language influences our world view (Gullberg). Lab members were also interviewed on local radio (Gullberg, Granfeldt), and on national radio (*Vetenskapsradion*, *Vetandets värld*; Schötz, van de Weijer). Finally, members appeared on Swedish national television talking about cat vocalisations (Schötz), and in international media about gesture research (Gullberg).

Finally, the Lab communicated about activities on its [website](#) and [social media](#) (Facebook, Twitter) with regular updates on research, events, grants, and awards. Information about policies, access, user agreements, participation in experiments, etc., are available on the web.

In the Media 2019

January 14, 2019

National research communication site,
www.forskning.se
Marianne Gullberg

February 9, 2019

Local newspaper, *Sydsvenska Dagbladet*
Susanne Schötz

March 15, 2019

Swedish National Television, *TV4*
Swedish National Radio, *P4 Extra*
Susanne Schötz

March 21, 2019

Research news www.lu.se
Niclas Burenhult

August 2, 2019

Danish national newspaper, *Weekendavisen*
Marianne Gullberg

September 2, 2019

Local radio, *Förmiddag i P4 Malmöhus*
Marianne Gullberg

September 2019

Lund University Magazine, *Lunds Universitets
Magasin, LUM*, No. 4
Victoria Johansson

September 12, 2019

National Swedish Radio, *Vetenskapsradion*
Susanne Schötz, Joost van de Weijer

October 29, 2019

National Swedish Radio, *Vetandets värld*
Susanne Schötz, Joost van de Weijer

November 7, 2019

Lund University Magazine, *Lunds Universitets
Magasin, LUM*, No. 5
Johan Mårtensson

December 6, 2019

Local student paper *Lundagård*
Henrik Garde, Jens Nirme



Lab demos

NATIONAL VISITORS

- Minister of Higher Education and Research, Matilda Ernkrans
- The Wallenberg Foundations
- The Swedish Research Council
- Italian Institute of Culture, Stockholm
- Stockholm University
- Royal Institute of Technology (KTH), Stockholm
- Deans from the National Medicine Faculties network, Sweden
- Financial officers from the Social Science Faculties National network
- Cross4Health/Innovation Skåne
- Faculty of Humanities, Malmö University
- LU Leadership
- LU Futura, Lund University
- Pufendorf Institute Advanced Study Group In the interest of the nation
- Corporate Communication, Lund University
- Dept. of Health Sciences, Lund University
- Digital Cultures, Dept. of Arts and Cultural Sciences, Lund University
- Researchers from the Centre for Languages and Literature; Dept. of Human Geography; Environmental Psychology, Lund University
- PhD students from Dept. of Arts and Cultural Sciences, Lund University
- Master students from the Centre for Languages and Literature; the Centre for Theology and Religious Studies, Lund University
- Bachelor students from the Centre for Languages and Literature; Musicology; Dept. of History; Speech and Language Pathology; Architecture, Lund University; Kristianstad University

INTERNATIONAL VISITORS

- Bethlehem University, Israel
- Copenhagen Business School, Denmark
- Central Connecticut State University, USA
- Exchange Master students, Lund University
- Institute of Cognitive Sciences and Technologies (ISTC), CNR, Rome, Italy
- Jordan University of Science and Technology, Amman, Jordan
- Leiden University, the Netherlands
- Nicolaus Copernicus University, Poland
- Saxo Institute, Copenhagen
- Ubisoft, Montreal, Canada
- The Oxford Research Centre in the Humanities, University of Oxford, England
- University Ca' Foscari, Venezia, Italy
- University of British Columbia, Canada
- University of Copenhagen, Denmark
- University of Denver, Colorado
- University of Göttingen, Germany
- University of Oslo, Norway
- University of Toronto, Canada
- University of Zurich, Switzerland
- Valdosta State University, Georgia, USA



Visitors 2019

January 28–February 1, 2019
and March 4–11, 2019
Roy Hessels
Utrecht University, The Netherlands

March 4–April 30, 2019
Ignace Hooge
Utrecht University, The Netherlands

April 12–18, 2019
Aleksandra Syczewska
Universität Hannover, Germany

June 9–14, 2019
Minali Dinesh Parshotam, Taryn Lee Dick
Stellenbosch University, South Africa

August 7–12, 2019
Simone Gultzow
Stellenbosch University, South Africa

September 23–October 15, 2019
Marieke Hoetjes
Radboud University Nijmegen, The Netherlands

September 24–25, 2019
Nicholas Evans
Australian National University, Australia

October 12–27, 2019
Janneke Hoks
Koninklijke Scholengemeenschap Apeldoorn,
The Netherlands

October 29, 2019
Maria Timoshenko
Kungliga Musikhögskolan, Stockholm

November 18–20, 2019
Robyn Berghoff, Linda Broders
Stellenbosch University, South Africa



Organisation of Conferences, Workshops and Symposia 2019

May 15, 2019

Digital tools for text transcription, encoding and
visualisation
LU Humanities Lab
Elisabet Göransson

August 15, 2019

Challenges and Developments in Preserving and
Publishing of Large Audio/Video Data
Research Data and Humanities 2019
Oulu, Finland
Johan Frid, Jens Larsson

August 18, 2019

From lab-based studies to eye-tracking in virtual
and real worlds: conceptual and methodological
problems and solutions
The 20th European Conference on Eye Movements,
ECEM 2019
Alicante, Spain
Diederick C Niehorster

August 28–31, 2019

European Second Language Association, EuroSLA 29
LUX, Lund University
Marianne Gullberg

November 18, 2019

Imaging the visual system
LU Humanities Lab
Diederick C Niehorster

November 26, 2019 Eye-tracking in ethnic relations

LU Humanities Lab
Marcus Nyström



Staff members 2019

Niclas Burenhult
Researcher

Johan Frid
Local Coordinator Swe-
CLARIN
Researcher

Henrik Garde
Systems Developer

Maria Graziano
Researcher
Educational Developer

Marianne Gullberg
Director

Nils Holmberg
Systems Administrator

Martina Holmgren
Administrative Assistant

Victoria Johansson
Deputy Director

Giacomo Landeschi
Research Engineer (GIS)

Carolina Larsson
3D Assistant

Jens Larsson
Project Assistant
Systems Administrator

Stefan Lindgren
Research Engineer, Purcha-
sing Coordinator

Kate Mesh
Postdoc

Johan Mårtensson
MRI Liason Officer

Diederick C. Niehorster
Research Engineer (Eye-
tracking)
Researcher

Jens Nirme
Motion capture Assistant
PhD student Cognitive
Science

Marcus Nyström
Research Engineer (Eye-
tracking)

Maja Petersson
Administrative Coordinator
Directory Administrator

Peter Roslund
Research Engineer (LARM)
Purchasing Coordinator

Susanne Schötz
Researcher

Joost van de Weijer
Methodologist
Researcher

Cecilia Whitehorn
Finance Officer



Funders

- Birgit Rausing Language Programme
- City of Lund
- Crafoord Foundation
- Einar Hansens Allhemsstiftelse
- EU Marie Skłodowska-Curie Individual Fellowship
- The Joint Faculties for Humanities and Theology
- Language Learning – A Journal of Research in Language Studies
- Linnaeus Centre Cognition, Communication, and Learning (CCL)
- LMK (Lars Mikael Karlsson) Foundation
- Lund University Research Board
- Marcus & Amalia Wallenberg Foundation
- Royal Society of Letters in Lund
- Strategic Research Area for e-Science, eSENCE
- Swedish Foundation for International Cooperation in Research and Higher Education (STINT)
- Swedish Research Council



TEXT

Marianne Gullberg
Victoria Johansson

LAYOUT

Maja Petersson
Louice Cardell Hepp

COVER PHOTO

Johan Bävman

PHOTOGRAPHY

Nadia Frantsen
Henrik Garde
Giacomo Landeschi
Åsa Lundgren
Kennet Ruona
Peter Roslund
Joost van de Weijer
Anders Wieslander

PRINT

Mediatryck

The PDF version contains hyperlinks to
resources.



LUND
UNIVERSITY

www.humlab.lu.se

LUND UNIVERSITY

Box 117
221 00 Lund, Sweden
phone +46-222 00 00
www.lu.se