



university of
groningen

Centre for Language
and Cognition
Groningen (CLCG)
Research Review
2016-2021



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Preface

The peer review committee responsible for this report would like to thank staff of CLCG and the Faculty of Arts for the excellent way in which they have prepared and shaped the review process. The documentation provided in advance, in particular the critical and detailed self-evaluation report, as well as the open attitude of the management, staff and PhD candidates during the site visit have made a constructive dialogue possible, which was highly instructive and informative for all parties involved. Thanks to this, the committee is convinced that it has strong evidence both for the very positive evaluation of CLCG as well as for the recommendations provided in this report. We hope they will contribute to a bright future of CLCG.

Prof. Sjef Barbiers

Chair of the committee

February 9, 2023

Introduction

The executive board of the University of Groningen commissioned a review of the Centre for Language and Cognition Groningen (CLCG) as part of the university's regular six-year quality assurance cycle. This review had the dual purpose of improving the quality and relevance of research, and providing accountability to the executive board, funding bodies, the government and society as a whole.

Composition of the committee

The executive board appointed a review committee (hereafter: 'committee') of six external peers, including a postdoc. The committee consisted of:

- Prof.dr. L.C.J. (Sjef) Barbiers, (*chair*), Professor of Dutch Linguistics, Leiden University; Board Member Domain Social Sciences and Humanities, Dutch Research Council;
- Prof. dr. J.M.A. (Jos) Hornikx, Professor of International Business Communication, Radboud University;
- Prof. dr. A (Anne) Abeillé, Professor of Linguistics at Université Paris Cité;
- Dr. M. (Martijn) Kleppe, Member Board of Directors KB, national library of the Netherlands;
- Prof. dr. E. (Eleni) Peristeri, Associate Professor of Psycholinguistics, Aristotle University of Thessaloniki, Greece
- Dr. I.A. (Inge) Stortenbeker, postdoc at Radboud University Nijmegen.

Appendix 1 includes a short resume of each of the committee members.

The committee was supported by drs. E.J. (Erik) van der Spek, who was appointed independent secretary to the committee.

To ensure a transparent and unbiased assessment process, all members of the committee signed a statement of impartiality and confidentiality. Prior to the site visit, existing professional relationships between committee members and research units under

assessment were discussed. The committee concluded there was no risk in terms of bias or undue influence.

Assessment criteria

The research evaluation followed the aims and methods described in the Strategy Evaluation Protocol 2021-2027 ('SEP'). This protocol for the evaluation of publicly funded research in the Netherlands was drawn up and adopted by the Universities of The Netherlands (UNL), the Dutch Research Council (NWO), and the Royal Netherlands Academy of Arts and Sciences (KNAW).



Under the Terms of Reference issued by the University of Groningen, the committee was required to evaluate the quality of research conducted by CLCG as well as to offer recommendations in order to improve the quality of research and the strategy of CLCG. Specifically, the committee was asked to judge the performance of the unit on SEP's three main assessment criteria (Quality, Relevance, Viability), and offer its written conclusions as well as recommendations based on considerations and arguments. Four additional aspects also listed in SEP (Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy) were to be taken into consideration when evaluating the three main criteria.

Documentation

Prior to the site visit, the committee received the self-evaluation report of the institute, including the information and appendices required by the SEP. The following additional documents were provided:

- Strategy Evaluation Protocol 2021-2027;
- Terms of Reference for the research review;
- Documentation on University and Faculty level (strategic plans, Open Science Programme, et cetera);
- Documentation on Institute level (for instance annual reports, analysis of scientific output, et cetera).

Working method

Leading up to the site visit, the committee members were asked to study the documentation and formulate preliminary findings and questions.

The two-day site visit started with a committee meeting, during which the committee discussed its preliminary assessments. Additionally, it considered procedural matters and agreed upon a working method. During the site visit days, the

committee met with representatives of the faculty board and the institute, including the management, senior and junior researchers and PhD candidates. The site visit was concluded with a meeting in which the committee discussed its findings and conclusions, followed by a presentation of initial findings and recommendations by the committee. The schedule for the site visit is included in appendix 2.

After the site visit, the secretary drafted a first version of the committee report, based on the assessments drawn up by the committee members. This draft report was circulated to all committee members for comments. Subsequently, the draft report was presented to CLCG for factual corrections and comments. After considering this feedback in close consultation with the chair and other committee members, the secretary finalised the report. The final report was presented to the executive board of the University of Groningen.

Centre for Language and Cognition

1. Organisation, mission and strategy

The Centre for Language and Cognition Groningen (CLCG) is one of the three research institutes of the Faculty of Arts of the University of Groningen. CLCG's mission is to operate at the forefront of language research and share results of work with colleagues and societal partners. Its scientific aim is to generate profound theoretical insights, innovative research methods and to allow the international science community to profit from these advances through open access. The institute holds a tenured staff of 24.2 fte, with an average of 40 fte PhD candidates and 3-4 fte postdocs.

The linguistic research of the institute is organised in four CLCG research groups that incorporate both monodisciplinary and multidisciplinary perspectives:

- Computational Linguistics (CL)
- Discourse and Communication (DISCO)
- Neurolinguistics and Language Development (NLD)
- Theoretical and Empirical Linguistics (TEL).

The mission and aims of CLCG are connected with the unique geographical position of Groningen. The institute feels a special responsibility towards languages and dialects spoken in the Northern Netherlands (Frisian and Lower Saxon, including Gronings). The northern part of the Netherlands is highly multilingual and multidialectal and offers many opportunities for CLCG's research on multilingualism.

Another focal point of the research is connected with one of the societal themes of the University of Groningen: Healthy Ageing. The research of CLCG on for instance typical and atypical language development, language disorders and health communication is closely connected to this theme.

Governance

The governance of CLCG has not seen major changes since the previous research assessments. The Board of the Faculty of Arts bears responsibility for the governance and management of the Faculty. The Dean holds the research portfolio within the Faculty Board. The Board appoints the directors of the research institutes and the director of the Graduate School for the Humanities (GSH). The only new feature is the introduction of clusters of related Bachelor's and Master's programmes. These clusters are not only responsible for the teaching strategy but also for personnel strategy and budget. As an outcome of the 2021 evaluation of the cluster organisation, teaching and research needs are now combined in strategic personnel planning.

Within CLCG, the four research clusters are the main organisational units. However, during the site visit the committee learned that these clusters do not constitute rigid units. Some groups (for instance the NLD-group) consist of more groups, some staff members participate in two or more groups, and the committee has also seen various examples of cross-group collaborations. This demonstrates that the borders between groups are not perceived as hurdles. In practice, the groups mainly serve as communication channels. The committee agrees with this informal character of the research groups and believes it suits its purpose. However, communication about the governance structure could be improved. One staff member mentioned that he understood the governance structure only recently while reading the self-evaluation report, and others reported that their lack of understanding of the organisational structure made it difficult to know whom to approach for specific questions.

Strategic goals

The goals and ambitions of CLCG in the past period (2016-2020) have been in line with the Faculty's strategy. On a Faculty level, the strategy has been aimed at maintaining a high quality of research. This is done by offering incentives and good facilities to researchers

and by safeguarding research time for staff members. The publication aim is set at two academic articles per year, including at least one peer-reviewed article. For funding, an important target has been to establish a monitoring system and to achieve an increase in external funding. Other targets were formulated on the number and success rate of PhD candidates, on open access and on societal impact; these targets will be covered in the appropriate sections below.

As an institute, CLCG has formulated a number of additional goals that are partly based on the recommendations made during the previous research assessment in 2016:

1. Deliver high-quality research with societal impact;
2. Improve the infrastructure to ensure high-quality research;
3. Ensure better visibility of societally relevant research;
4. Improve support for interdisciplinary research;
5. Improve the training of PhD candidates.

The committee has discussed a number of these goals and their results with both management and research staff. For instance concerning the second goal, the committee has seen that CLCG has taken several initiatives to improve its experimental facilities, resulting in investments in hardware for experimental linguistic research. For example, in 2019 a new EEG system, a new eye-tracking system, new electromagnetic articulography devices and an ultrasound tongue imaging device were acquired. At the same time, the self-evaluation report mentions that the housing of the lab facilities leaves a lot to be desired; the housing situation will hopefully improve during the coming period (see *Main issues*).

Another strategic goal where substantial improvements have been made, is the visibility of societally relevant research. One of the most striking results is the acquisition of the mobile speech laboratory SPRAAKLAB, a van with equipment to record speech data on location. The committee has visited this facility and is impressed by its possibilities.

The SPRAAKLAB also makes fieldwork more visible and enables data collection at public outreach events, such as the Noorderzon festival.

For the next period, this strategy is to be continued and expanded. In this, CLCG follows the strategic plan of the Faculty of Arts for 2021-2026, entitled 'Building the State of the Arts', which was approved by the University Board. One of the main points of this strategic plan is to raise the level of the Faculty's research facilities by setting up so-called 'Collaboratoria' (co-working spaces) and top-class laboratories. Another strategic aim is to increase the visibility and usability of the Faculty's research for the outside world with the help of the Faculty science communication specialist (see below under 'Societal relevance'). For PhD candidates the main target is to increase the success rate by using clear feasibility requirements at the start of each PhD trajectory and by enhancing supervision and coaching (see below under 'PhD programme'). The committee has established that the CLCG strategy has been discussed with all staff, including PhD candidates, and with a number of stakeholders. Their comments have been incorporated in the final draft of the strategy document.

Main issues

The main strategic concern is the difficulty in hiring excellent researchers. This is mentioned in the SWOT analysis as a threat, given the current labour market. The committee was impressed by the quality of the newly recruited international staff, but learned that the number of applications for open positions has dropped dramatically. New staff is needed both for replacing retired staff members, and for additional research positions given the recent developments in funding opportunities that arise from the new Sector Plan (see below). Management admits that they have no clear solution to this pressing problem, although several options are being considered. For instance, CLCG found that hiring a group of postdocs as a team is more attractive than hiring for individual positions. Another option is offering a position with

more research time and less teaching responsibilities.

In this context, the committee also discussed the impact of the Sector Plan Social Sciences and Humanities (SSH) with the management. This plan allows for an additional investment of 10 million euros a year in university research in the social sciences and humanities. The plan includes relevant themes for CLCG researchers, in particular the themes 'Humane AI' and 'Languages and Cultures', providing opportunities to hire additional postdocs and assistant professors. Plans are underway to hire 12 postdocs and 24 assistant professors for the Faculty of Arts, which would reduce the teaching load for both current and new staff members. However, the committee is aware of the fact that other universities also have access to these new funds, which will result in an even more constrained labour market.

The committee feels that CLCG is trying hard to find ways to hire excellent researchers in a difficult labour market. It also acknowledges that there is only so much that can be done at institute level, although the new investment opportunities arising from the Sector Plan offer possibilities to make for more attractive job descriptions, including a stronger research profile. The committee therefore feels that CLCG should have a strong voice in the hiring strategy aimed at filling the relevant vacancies.

The committee has gained a good impression of the way funding application is organised by CLCG and the Faculty of Arts. As mentioned, the strategy has been aimed at developing a monitoring system of grant applications, and to achieve an increase in competitive applications for external funding. At Faculty level a funding officer is available to help researchers in writing successful grant applications. The committee noted that CLCG has realised good results in the previous six years (see also the next section, *Quality*).

In summary, the committee gained the impression that the strategy of CLCG is well-developed and addresses relevant issues. The

funding strategy has been successful, leading to a high research output. The research facilities have been improved and extended, although the housing of these facilities is still a subject of concern. The committee agrees with the focus on increasing the visibility, which also helps to enhance the societal relevance of much of CLCG's research. The main issue is the difficulty in hiring top level research staff, but measures are being taken both by CLCG and the Faculty of Arts to address this issue.

2. People and Community

Academic culture

CLCG subscribes to the ambitions of the faculty in developing a fertile and inclusive academic culture. In the self-evaluation report it is stated that everyone should feel welcome and free to contribute to the organization. The norm within the faculty is to treat all colleagues with respect. The site visit confirmed that both staff and PhD candidates experience CLCG as an open and inclusive community that allows all participants to provide input and develop new initiatives.

In the self-evaluation report, diversity is labelled a core value in the Faculty's organisational culture, as it is seen to open up new perspectives, bring in new leadership styles and stimulate creativity. Data on the composition of staff at Faculty level reveal that 38% of academic staff is non-Dutch and 40% is female. Specific data on CLCG were not available to the committee. While the Faculty's gender balance at professorial level (34% female, 66% male) does not compare unfavourably with what is customary elsewhere in the Netherlands, there is certainly room for further improvement. The impression of the committee coincides with these figures. The staff the committee has spoken to, was quite diverse in both nationality and gender. Full professors at CLCG are mainly male, but a number of upcoming retirements offer opportunities to improve the gender balance.

At Faculty level, gender balance is a focal point in strategic personnel plans and thus informs hiring decisions. The committee learned that a protocol is used when hiring full professors, which is quite detailed and includes an explanation about the steps taken to find (and preferably hire) female candidates. Furthermore, the Faculty will appoint a Diversity Officer who will be charged with developing an action plan. The committee trusts that new mechanisms for promoting and monitoring various types of diversity and inclusivity will ensue shortly.

HR Policy

The main issue in HR is the difficulty in hiring qualified staff, as explained in the strategy section. Another issue, that especially affects the junior staff, is safeguarding the allocated research time. As elsewhere in Dutch academia, the workload of staff is high. The heavy teaching load is mentioned as a weakness in the self-evaluation report, a weakness that has increased during the pandemic. The 60:40 ratio of research to teaching is difficult to reach in practice, especially for younger researchers who are building their careers and have to submit grant applications, supervise PhD candidates, develop courses and administer projects or fulfill other administrative duties within the Faculty. The threat of burnout is very real at this career stage.

Assistant professors that teach new courses receive an additional 10%, but some of them stated that more extra time is often needed. The committee learned that it is normal for new staff to spend the first year entirely on teaching. The committee recommends that steps are taken to monitor and where possible reduce the teaching load, especially for the younger staff members. An option mentioned by the junior staff is to establish a close connection between research and teaching, so that each staff member can teach at least one course within their own research area. The committee feels this is a recommendable idea.

For senior researchers, administrative tasks and the supervision of PhD candidates can take up much of the time that should be spent

on research, forcing researchers to write publications in their spare time. Another issue is that administrative tasks, such as being a member of the Board of Examiners or being a programme coordinator, may infringe on research time. Extra time is allocated for these tasks, but staff found this allocation often to be insufficient. The committee notes that safeguarding research time seems to be a recurrent problem at CLCG, since it has also been noted by the previous research committee. The committee was nevertheless pleased to note that some recent developments improved the situation or will soon improve it, partly in connection to national Sector Plan funding. An example is the introduction of research sabbaticals by The Faculty of Arts – a development applauded by all concerned. These recent developments are a good starting point in safeguarding research time.

A related issue is the effect of teaching and research on career development and promotion. In general, research profiles are leading when creating or confirming permanent appointments. However, the Faculty of Arts Strategic Plan for 2021-26 also mentions exploring the option of promotion to the rank of Associate Professor on the basis of a teaching profile. The committee feels that it would be helpful if this topic would be described more clearly in the hiring and promotion strategy.

The national 'recognition and rewards' programme (which started in 2019) has deliberately opened the door to recognising and rewarding different skills in academic HR policy and research evaluation, thus enabling diversified career paths. The committee learned that the Faculty is looking into ways to implement the principles of this programme in its HR policy, which would involve taking a clear stand on what is expected of staff in terms of management, teaching and outreach, and on how such efforts are compensated and rewarded. A first step is already taken in the introduction of a leadership programme. The committee hopes that the planned implementation of 'recognition and rewards'

can be given some priority in the coming period.

A final remark concerns the onboarding of new staff, especially postdocs and assistant professors. Although the postdocs and assistant professors the committee spoke to were positive about the mentoring they received, at the same time a number of them felt that they had to find their own way within CLCG. An additional problem was that the postdocs that arrived during the pandemic did not set foot inside the institute for the first year. Where supervision and coaching is well developed for PhD candidates, it is felt to be less so for other new staff members. Some postdocs were assigned buddies, just like the PhD candidates, while others were not. Although the new CLCG coordinator is found to be very approachable and helpful, the committee feels that onboarding of new postdocs and assistant professors should be improved. The intended influx of new staff underlines the urgency of an effective onboarding procedure.

An issue that is closely connected to the 'recognition and reward' programme, is the career perspective. This includes, among other things, the evaluation policy and the rules and criteria used for promoting staff. Several staff members indicated that they did not know what criteria were relevant for their evaluation; they were not clear on when, how and by whom they were evaluated. One of the staff members mentioned that the only way to get promoted is to acquire a large grant. The committee recommends that CLCG staff and Faculty HR see to it that communication on career perspective, evaluation and promotion is improved.

PhD programme

From 2016 – 2020 CLCG was able to install between 10 and 15 PhD candidates per year. A strong point of CLCG has been the long-standing international PhD programme Idealab, which comes with its own grants. In 2021 only 6 PhD candidates were installed, which may be due to the COVID pandemic. However, in the upcoming years CLCG faces new problems in this regard. From 2023

onwards, it will no longer be possible to offer PhD candidates a scholarship; they will have to be appointed as employees. Since this is more expensive, this change may lead to lower numbers.

CLCG has mentioned the lowering numbers as a threat, since it reduces the opportunities for research and lowers the possibilities of hiring CLCG's own PhD graduates as postdocs. Lower numbers of PhD candidates could especially affect the research in computational linguistics, since research in this area is quite time consuming. However, the committee has learned that there are several initiatives that could help to solve this issue, such as additional funding from the Ministry of Education. The Funding Officer might also help to attract new types of funding. The committee feels these options are sufficiently promising and trusts that CLCG and the Faculty of Arts will find a solution to this problem.

The training and coaching of PhD candidates is a joint effort of the institute and the Faculty-run Graduate School for the Humanities (GSH). GSH is home to all activities involving PhD research, PhD training, PhD supervision, and graduation within the Faculty of Arts. All PhD candidates are enrolled in the GSH. One month after starting, they are required to submit a Training and Supervision Plan (TSP). In this plan, they specify their supervisor, an outline of their research project, a list of training activities they plan to undertake and their Research Data Management Plan (RDMP). The PhD programme includes a training component of 30 ECTS. A number of training modules are mandatory, for instance the introductory event and the module on Academic Integrity. The go/no go review is mandatory as well.

The committee met with an enthusiastic group of young PhD candidates who demonstrate a sense of ownership about their projects. In general, they feel that they are well taken care of. The training programme combines a number of mandatory courses with sufficient freedom to allow PhD candidates to explore their own tracks. A

strong point is that PhD candidates are free to explore their own research projects. The candidates follow courses of different research schools, depending on their projects, and receive discipline-specific training through workshops and seminars. An improvement that was suggested is an overview of all Masters' courses that PhD candidates can follow. PhD candidates also value the soft skills they acquire during the PhD trajectories, for instance presenting their work, since these skills are also valuable outside academia.

For teaching, the situation differs for the two groups of PhD candidates. Candidates that are employed by the Faculty (funded by NWO) are obliged to teach, after an introductory training. Candidates that receive other types of funding are not obliged to teach, although a number of them still do. The attitude towards teaching is a bit ambivalent: on the one hand, teaching is perceived as a useful preparation for a future career inside academia, but on the other hand the PhD candidates find it to be very time consuming. In general, the candidates note that the communication on teaching options and requirements could be improved.

Supervision is intense, in the first year often on a weekly basis, during COVID in some cases even twice weekly. In addition, a number of candidates have been allocated a 'buddy', generally another PhD candidate that makes the new candidate feel at home and shows them around. The committee feels this buddy system to be a good addition to the supervision system and recommends that it is included as a standard feature.

The self-evaluation report states that the duration of PhD trajectories in the past years was often longer than 5 years; over the period 2013 – 2016, only a minority of the PhD candidates managed to complete their thesis within this period. This recurrent problem was noted during the previous research review as well. Both the Faculty and CLCG have now set the target that by 2026, 70% of the PhD candidates should have their manuscripts approved within 5 years.

One of the measures to increase PhD success rates is to formulate precise, feasible requirements about the size and shape of the thesis before the PhD programme begins. This is assessed during a so-called 'feasibility check' before the start of each PhD trajectory. The Faculty stresses the point that "the PhD thesis should not be regarded as a magnum opus but rather as a test of the PhD student's ability in the shape of a project with a deadline". (Faculty of Arts Strategic Plan 2021-2026, p. 14). A second measure is enhancing the supervision and coaching before and during the programme.

In general, the committee approves of the measures to improve and assess the feasibility of a PhD project before the start. However, there has been some discussion about the implications of the feasibility check for the format of the thesis: the default option is a thesis that combines three papers. The PhD candidates the committee spoke to did not have an issue with the 'nudging' towards an article format. The committee understands the reasons for promoting the article format, as long as a monograph still remains an option for PhD candidates that have good reasons to choose the latter format.

The PhD candidates experience some stress due to the go/no go moment, although the committee learned that in general potential problems with a PhD trajectory are identified in due time, that is long before the go/no go moment. For most PhD candidates this moment is a formality, although they appreciate the idea of establishing a moment to discuss what stage they have reached, keep track of their milestones and how to proceed. No go-decisions seem rare, none of the candidates the committee spoke to knew about cases where it happened, although the senior staff mentioned that it sometimes occurs and that it is a rather painful affair.

Finally, the committee found that the PhD candidates were generally aware of the relevance of societal impact. For candidates that are NWO-funded, attention to societal relevance is one of the requirements. However, in some cases societal relevance

was restricted to communicating to the general public using blogs, Twitter and other media. The committee feels that societal impact could be a more structural part of the PhD trajectory and the research plan. The new impact officer might help in achieving a more prominent place for societal relevance in PhD trajectories.

In summary, the committee feels that the PhD training and supervision is in good hands at CLCG and the Faculty of Arts. While the PhD success rate has been an issue during the previous period, measures have been taken to increase the chances of a feasible PhD trajectory. Both the go/no go moment and the feasibility check are useful measures in this regard. The training programme offers sufficient options to tailor it to specific needs. More focus on societal relevance could help to keep this important aspect top of mind with the PhD candidates.

3. Research Quality

The strategic aims that have been discussed in the strategy section have led to a wide range of results that illustrate the research quality of CLCG. These results include refereed journal articles, presentations and articles for important conferences (such as the ACL and EMNLP conferences for researchers in computational linguistics), PhD theses and grants. The committee has seen some fine examples of high quality research and interesting case studies, such as the development of computational resources and tools (corpora, automatic parsers, treebanks) for Dutch and related languages and dialects (text-to-speech system for Gronings). Another example is the development of cutting-edge language mapping techniques in paediatric patients with brain tumours in language-related areas. Furthermore, the committee was happy to see the recent move to the Machine Learning (ML) paradigm, making CLCG a unique place to compare and evaluate statistical methods and symbolic methods.

The citation analysis provided by CLCG moreover shows that a substantial number of

publications have been influential within their field. A comparison between the reporting period (2016-2021) and the three previous years (2013-2015) shows that output is increasing in most categories.

During the reporting period 65 PhD theses have been completed, illustrating the large share of PhD research within CLCG. Of these, four PhD theses (representing three out of four CLCG research groups) have been granted the cum laude distinction.

Academic leadership and funding

Several markers of external esteem are identified in the self-evaluation provided by CLCG. Its leadership status is shown by evidential indicators including prizes, grant capture, membership of research councils and committees at national and international level, and lastly, guest researchers and professorships by special appointment.

As already mentioned in the section on strategy, CLCG continues to be quite successful in grant capture. The last two years have yielded substantial results, with € 1.220 K obtained in 2020 and € 1.510 K in 2021. CLCG has been successful with a number of research grants funded by the Dutch Research Council (NWO). NWO funding includes the 'PhD candidates in the Humanities' scheme (5 PhD candidates funded), the NWO VENI programme (5 grants), NWO VIDI (3 grants), NWO Aspasia and NWO Open Competition. Several projects were funded by programmes initiated by the European Union, such as a Marie Curie fellowship, a Connecting Europe Facility research grant and a grant by EU Creative Industries Futures.

The committee agrees with CLCG's publication strategy, in which open access publications are becoming increasingly important (see also the section on Open Science below). The percentage of Open Access publications has increased from 50% in 2016 to 75% in 2021. This is partly due to the large number of NWO-funded projects, for which Open Access publications are mandatory.

A final achievement to be mentioned here consists of the efforts taken by CLCG to strengthen interdisciplinary research and foster cross-faculty interaction. Research at CLCG has many interfaces with other disciplines, with medical applications standing out the most. CLCG researchers already collaborate with other faculties, for instance with the University Medical Centre Groningen (UMCG) (for example in analysing clinical interactions), with the Faculty Science and Engineering (artificial intelligence) and Social Sciences (psycho/neurolinguistics, language processing and educational sciences). To encourage interdisciplinary research, staff members are stimulated to develop into 'T-shaped researchers', with a strong monodisciplinary foundation but branching out with keen interests in adjacent research areas.

Facilities and support

A final but important condition for high quality research are the resources, which for CLCG consist mainly of the lab facilities and the digital infrastructure. CLCG facilities include an EEG lab, an eye-tracking lab and a speech lab. As mentioned in the strategy section above, the laboratory equipment has undergone an upgrade, with for instance a new EEG system and a new eye tracking system being installed in 2019. The committee briefly visited these facilities, got to see the equipment and saw some examples of research being conducted. However, the facilities are housed in office spaces; in some cases, noises from the hallway and adjacent rooms may interfere with the experiments and/or contaminate the results. Moreover, CLCG has a number of expansions on its wish list, such as dedicated laboratories for research on children's language development. The upcoming renovation of the Harmonie Building offers an opportunity for improvements, but this renovation has yet to start.

Laboratory facility support also seems to be an issue. Each lab has a staff member assigned as a lab manager, in some cases on a voluntary basis. In many cases, the lab managers are indispensable for handling the (sometimes

expensive) equipment and assisting with the research setup.

The committee feels that an upgrade of the research facilities and the lab support is long overdue. In the view of the committee, the housing situation requires immediate attention. Since the renovation of the Harmonie building may take longer than expected, the committee recommends that CLCG and the Faculty of Arts develop an optimisation plan concerning the facilities, their housing and the appropriate support, in order to bridge the renovation period. The support staff should be generously provided for, either in time or money. The committee suggests that part of the funding from the new sector plans be used for this purpose.

For computational research that exceeds the facilities of CLCG, researchers can use the centralized digital infrastructure of the UG at the Centre for Information Technology (CIT). This centre provides support in the areas of (for example) high performance computing (HPC), automation of data processing and analysis. Researchers at CLCG can also employ two data stewards to optimize their computational research setup. The CIT facilities are mainly used by researchers from the Computational linguistics group, where new staff learns from the more senior staff.

The committee concludes that the digital infrastructure at the UG offers a solid base for more advanced computational linguistic research. However, the committee also noted that CLCG is not very active in the national digital infrastructure. Though the necessity to use the facilities may not always be urgent given the own facilities in Groningen, the group could also play an important role in further developing these national facilities together with for example SURF, eScience Center or one of the National Research Facilities.

Open Science

Open Science is part of the strategy of the University of Groningen and is therefore promoted at both University and Faculty level. Open Science is defined as the 'new normal'

by the League of European Research Universities, of which the University of Groningen is part. The University has instituted an Open Science programme, which contains the following pillars:

1. Further implementation of Open Access publishing
2. Stimulating FAIR Data and providing more information on Open Data
3. Stimulating the use of Open Educational Resources
4. Achieve maximum impact of science on society by Public Engagement
5. Develop an Open Science Communication approach to raise awareness.

The Faculty of Arts offers researchers of the institute an infrastructure to deposit their data, in cooperation with the Groningen Digital Competence Centre. This infrastructure includes a tool to store data management plans, repositories for the registration of datasets, and Virtual Research Workspaces (VRW). Two data stewards are employed (one at Faculty level and one at University level) to advise on items like data storage and Research Data Management Plans.

As mentioned earlier, the percentage of Open Access publications by CLCG has increased from 50% (in 2016) to 75% (in 2021). This increase has been due partly to the large number of NWO-funded projects (for which OA is mandatory). A relatively large proportion (20% in 2021) consists of indeterminate Open Access status, which means the actual number of OA publications will be even higher. CLCG aims to reduce the number of publications with indeterminate status in the upcoming period.

The committee has discussed the Open Science policies with several groups of researchers and stakeholders. The committee learned that all PhD candidates follow a training on data management and FAIR principles as one of the compulsory courses. They also have to hand in a Research Data Management Plan (RDMP) as part of the preparation for their research. The stakeholders also underline the importance of Open Access. Since commercial companies do

not have contracts with the large publishing companies, Open Access is an important way for them to have access to published research and the underlying data.

Finally, the committee noted that CLCG is also aware of the relevance of Open Access for software and datasets. An example is a meta-analysis publication in Computational Linguistics on a systematic investigation of the extent to which resources (datasets and computer programs) are available to peers to reproduce experimental results. The committee finds this applaudable, since outdated software and operating systems are considered to be one of the main risks in data storage and accessibility of data in the future.

In summary, the committee is impressed with the research quality achieved by CLCG during the evaluation period. Strengths include CLCG's academic leadership, the successful attraction of grants, the publication strategy and the strengthening of interdisciplinary research. The research facilities are the main worry in this respect; the committee hopes that temporary improvements are possible until the Harmonie building is renovated. Finally, CLCG and its researchers are well on their way to achieve the Faculty's Open Access goals.

4. Societal relevance

The committee was pleased to see that for many research projects of CLCG, societal relevance comes naturally. As mentioned in the strategy section, CLCG research contributes to a number of UG's societal goals, in particular Healthy Ageing and Sustainable Society. An example is the research project on language learning as an anti-ageing tool, which was awarded a VIDI grant in 2018. Another focal point in research is the Northern Netherlands region (Friesland and Groningen), that offers a rich environment for studying linguistic and cultural diversity.

The committee is impressed with CLCG's achievements in terms of contributions to society, both in the region and elsewhere, as

well as in terms of the high quality and quantity of its outreach activities. The documentation provided numerous examples of books, source publications, catalogues, websites, films, exhibitions and lectures aimed at professional and general audiences. Often, such publications and products are connected to projects that involve societal partners.

Stakeholders

The committee met with a group of stakeholders from different backgrounds, ranging from the development of language curricula to trauma surgery. All stakeholders are or have been involved in research projects with partners at CLCG, both on a personal and a more institutional base.

In many cases research questions are developed, (and sometimes explored) jointly with stakeholders. An example is the collaboration on the development of language curricula, with the research question 'How can we develop relevant materials for literary education in the upper levels of secondary education?' Another instance is the research on language disorders among children and adults, where neurolinguistic research is used to improve treatment methods. Moreover, since many of the patients speak Frisian, these tools and treatment methods are developed in two languages. The committee was impressed by the range and intensity of the collaborations.

The stakeholders the committee spoke with also had a view on skills that are relevant for the interaction between researchers and societal partners. Data skills, training skills and educational skills were mentioned as important. For instance, one of the stakeholders stressed that researchers should not only speak the language of research, but also the language of teachers. However, all stakeholders were satisfied with the level of skills of the PhD candidates they worked with.

The stakeholders also mentioned the importance of open access to academic publications. Since the colleagues outside academia do not have subscriptions to academic journals, open access is crucial to

stay up-to-date on new developments in research. The committee feels that equal partners should have equal access to research and wonders whether it would be possible to give societal partners full access to the academic publications in the university library.

The committee feels that the current collaborations between CLCG and various stakeholders are very successful and merit the exploration of even closer cooperation. The committee encourages CLCG to explore the possibility to develop joint projects, a strategy that is stimulated by NWO as well. An even closer collaboration with societal partners could also help in attracting additional funds. The new impact officer could play a role here.

Finally, the committee learned during the site visit that the option to have more regular contacts or shared events with existing stakeholders is being discussed. The committee finds this to be a recommendable idea.

Scale and relevance

CLCG has outlined a wide range of examples of research with a societal impact, some of which have been mentioned above already. A number of research projects are used by societal target groups. An example mentioned in the self-evaluation report is the Token Test app, which is used for aphasia assessment after a stroke. Another application with a direct practical use is the Dutch version of GraphoGame, a game for early rehabilitation and diagnostics of reading difficulties. A third example is the research on diagnosis of dyslexia in adults, which is done in collaboration with the Groningen Expertise Center for Language Communication Disorders (GETC).

Although the previous examples show that there are ample cases of research with a societal impact at CLCG, the committee has not been able to obtain a clear view on the strategy used to ensure this impact. While in many cases the relation with societal partners comes naturally, it could be helpful to explore the options of societal relevance for each project. The committee therefore

recommends that CLCG ensures that societal impact is a structural part of research. Moreover, since the committee did not encounter metrics of monitoring on societal impact, it would be recommendable to have a clear accounting of or/and more systematic reports on the actual use and impact of the societally relevant activities at the end of each research project.

Outreach and visibility

One of the goals during the reporting period has been to improve visibility of societally relevant research. The committee has established that this has been realized in various ways. The most striking example is the acquisition of the mobile speech laboratory SPRAAKLAB (Speech Lab), a truck equipped with recording equipment. The committee has seen a demonstration of this SPRAAKLAB, which not only facilitates fieldwork *in situ* (for instance while visiting homes for the elderly), but also helps to make this fieldwork more visible. The speech lab received the KNAW Appreciated! grant for their activities in research dissemination and public engagement.

Staff members of CLCG participated in numerous activities and initiatives to communicate relevant research results to a wider audience. These activities include appearances on national television (e.g. on the talk show *Jinek*), at festivals (Lowlands, Zpanned Zernike, Letterenfestival) and participation in a national citizen science project (*Maak dat de kat wijs*). One of the staff members even published a comic book about his research. Some of the societal outreach activities have been rewarded by societal partners. The training programme 'Communication in the operating theatre' received the UMG Teaching Innovation Prize (2018).

Finally, the committee has noted that CLCG aims to enhance the visibility of its research with a clear societal impact in the upcoming years, for instance by intensifying the use of social media and improving the CLCG website. While the committee applauds these intentions, it would like to add (as mentioned

earlier) that good monitoring and metrics might also help to increase the visibility of all research projects with a societal relevance.

5. Viability

CLCG has discussed several weaknesses and strengths in its SWOT analysis in the self-evaluation report. Most of these weaknesses and strengths have been discussed in the previous sections. Weaknesses include the research facilities (lab equipment and housing), the heavy teaching load, the difficulty in hiring new staff due to the strained labour market, and the possible reduction in PhD candidates due to the disappearance of the bursary system. The committee agrees with this analysis. An additional complication is that most of these problems cannot be solved by the institute, since they have to do with Faculty or University policy or even social developments (the labour market).

The goals for the upcoming six years (2022 – 2027) are, not surprisingly, closely connected to the issues mentioned here. CLCG's prime target is hiring excellent researchers, both for replacing retired staff members and for new research positions. The institute in particular wishes to hire staff members with advanced statistical and computational skills, since these skills are becoming increasingly relevant in contemporary research. Parallel to finding new staff with these qualifications, it would seem wise to also offer current staff members opportunities to improve their statistical and computational skills, and thus help them keep up with this highly dynamic field. As mentioned, the new Sector Plan SSH offers funding opportunities to hire additional postdocs and assistant professors, especially for the research themes 'Humane AI' and 'Languages and Cultures'.

The committee strongly agrees with this focus on hiring excellent researchers. The sector plan SSH allows for a strengthening of the humanities, which in the view of the committee is long overdue. However, in the current labour market funding alone is not sufficient, especially since other universities

are also in the process of hiring additional staff. The committee recommends reviewing the hiring strategy (together with the responsible staff at Faculty level) to see whether for instance communication and job descriptions could be improved. The committee has established that excellent research is being done in Groningen. It would be interesting to explore whether this research could be highlighted more when advertising for new staff.

In this regard, the committee sees a clear connection between research facilities and the hiring of new staff. In this, the committee strongly supports CLCG's goal to improve the research infrastructure. Not only is an excellent research infrastructure a necessary condition to keep up with current developments in research, it is also an important trump card in recruiting new research staff. Therefore, as mentioned earlier, the committee recommends developing a plan to explore whether temporary improvements on the research infrastructure and their housing are possible, in the period preceding the renovation of the Harmonie building. This plan should also cover the support by lab managers/coordinators.

However, the committee feels that it would be a mistake to focus on the weaknesses and threats only. The committee is convinced of the fact that CLCG has many strengths and opportunities that are reflected in the self-evaluation report as well. The committee has seen many examples of excellent, state-of-the-art research, and interdisciplinary work that contribute to a vibrant research atmosphere. A large part of this research is societally relevant as well, and the committee has seen numerous connections between CLCG researchers and societal organisations. The institute, moreover, is well-connected in the northern region (Friesland and Groningen) and researchers are sensitive to the needs of this region. Although the infrastructure in general needs improvement, this does not apply to the digital infrastructure: in particular, the HPC facilities are of a high standard. Promising opportunities are, among others, the renovation of the Harmonie

building and the availability of substantial new funding of the SSH Sector Plan.

All in all, the committee gained a favourable impression of the viability of CLCG. The hiring of new research staff and the improvement of the research facilities prove to be serious challenges, but the institute is well aware of these challenges and has formulated relevant and concrete goals to face them. In doing so, the institute needs support from the Faculty of Arts, but the committee has been assured that such support is forthcoming. The foundations of the research community at CLCG are firm and the societal relevance or research seems to come naturally in most cases. Therefore, the committee is convinced that CLCG has an excellent base to continue conducting ground-breaking and socially relevant research in the years to come.

Conclusion and recommendations

In order to further develop CLCG's and the Faculty's policies and research quality, the committee offers the following recommendations:

- The committee recommends reviewing the hiring strategy (together with the responsible staff at Faculty level) to see whether for instance communication and job descriptions could be improved. The committee feels that CLCG should have a strong voice in the hiring strategy aimed at filling the relevant vacancies.
- The committee recommends that CLCG and the Faculty of Arts develop an optimisation plan concerning the facilities, their housing and the appropriate support, in order to bridge the renovation period. The support staff should be generously provided for, either in time or money. The committee suggests that part of the funding from the new sector plans be used for this purpose.
- The committee recommends that steps are taken to monitor and where possible reduce the teaching load, especially for junior staff members.
- The committee feels that onboarding of new postdocs should be improved. Both for postdocs and PhD candidates the buddy system should be included as a standard feature.
- The committee recommends that CLCG ensures that societal impact is a structural part of research. Moreover, it would be recommendable to have a clear accounting of the societal impact at the end of each research project.
- The committee feels that equal partners should have equal access to research and encourages CLCG to explore whether it would be possible to give societal partners full access to the academic publications in the university library.

Finally, the committee has made a number of recommendations to improve communication on various topics throughout this research review:

- communication about the governance structure;
- communication on career perspective, evaluation and promotion;
- communication on teaching options and requirements for PhD candidates.

Appendices

1. Resumes of committee members

Prof.dr. L.C.J. (Sjef) Barbiers

Sjef Barbiers is Professor of Dutch Linguistics at Leiden University. He is a board member of the Domain Social Sciences and Humanities, Dutch Research Council.

Barbiers received his PhD in Leiden in 1995 for the thesis *The Syntax of Interpretation*. From 2000-2016, he worked as senior researcher of variation linguistics at the Meertens Institute (Royal Netherlands Academy of Sciences) in Amsterdam. From 2005 to 2015, he was also Professor of Variational Linguistics of Dutch at Utrecht University. Since 2016, he has been Professor of Dutch Linguistics at Leiden University.

Barbiers was the scientific leader of the Dutch-Flemish research project *Syntactic Atlas of Dutch Dialects (SAND; 2000-2005)*, co-author of the two syntactic atlases that emerged from this project and responsible for the underlying database and software tools (DynaSAND). He was leader of the research project *European Dialect Syntax (2005-2011)*. He was also one of the scientific leaders of the *Maps and Grammar project (2013-2018)* investigating the relationship between the geographical distribution of syntactic variables and natural language as a cognitive system. From 2014-2021, he was one of the scientific leaders of the national digital research infrastructure projects *CLARIAH* and *CLARIAH Plus*.

Prof. dr. J.M.A. (Jos) Hornikx

Jos Hornikx is Professor International Business Communication at Radboud University Nijmegen. He is Head of the Department of Language and Communication and Former research coordinator of the Centre for Language Studies (2019-2022). Furthermore he is editor-in-chief of *Tijdschrift voor Taalbeheersing* and editor of *Dutch Journal of Applied Linguistics*.

His work on argumentation and reasoning deals with the way people reason with arguments. He investigates the relationship between argument quality on the one hand and persuasive arguments on the other. He is also interested in the role of culture addressing the question of what of people's reasoning with arguments is universal, and what is culturally variable.

His work on multilingualism and culture has concentrated on two themes. One theme is cultural value adaptation: does adapting a message to a person's cultural background affect the persuasion process? Another theme is the occurrence and effects of foreign language use in advertising.

Prof. dr. A (Anne) Abeillé

Anne Abeillé has been a Professor of Linguistics at Université Paris Cité since 2000, she has taught in various universities (U. Paris 8, Cornell U, U Venezia, UC Davis, U Lexington, U. Neuchatel, Utrecht University...). She was department chair in 1999-01 and head of the CNRS Laboratoire de linguistique formelle in 2011-2016. She is now Head of Paris Graduate school of linguistics. A former member of Institut Universitaire de France, she has received the CNRS bronze and silver medals.

She has worked in three main directions:

1. Developing formal models for syntactic analysis, especially Lexically Tree Adjoining Grammar (LTAG), and Head-driven Phrase structure Grammar (HPSG);
2. Empirical analysis of French syntactic phenomena and other languages, especially Romance languages, with corpus-based and experimental methods; culminating in the publication of the *Grande Grammaire du français*;
3. Production of linguistic resources, especially the *French treebank*, a richly annotated corpus of newspaper texts, freely distributed for research purposes, with hundreds of users worldwide.

She has published 39 articles, 8 books, and 69 book chapters on various topics in computational, theoretical and experimental syntax.

Dr. M. (Martijn) Kleppe

Martijn Kleppe is Board member Research & Discovery of the KB, National Library of the Netherlands. Trained as historian, he wrote a dissertation on photographic iconic images by building and applying computational techniques. Before moving to the KB, he was a researcher in several European Digital Humanities research projects that focused on opening up (audio) visual and textual archives by using AI techniques such as National Language Processing, speech recognition and computer vision.

At the KB, he led the Research Department and moved to the Board of Directors in 2022. He oversees both the online and physical Research and Discovery services of the KB, as well as all research activities in order for all user groups to get better, richer and more innovative access to the national cultural treasures.

Martijn is board member of CLARIAH, the national digital infrastructure for the Arts and the Humanities (NWO). He is one of the founding members of both the Cultural AI Lab (ICAI) as well as Future Libraries Lab (TU Delft). He chairs the Research Advisory Board of the Network Digital Heritage (NDE), and is member of both the National Research Council for Heritage (NWO, OCW & RCE) as well as the Scientific Technical Council of SURF.

Prof. dr. E. (Eleni) Peristeri

Eleni Peristeri is an Associate Professor of Psycholinguistics at the Department of Theoretical and Applied Linguistics, School of English, Aristotle University of Thessaloniki, Greece, and the Director of the Language Development Lab at the same Department. She holds a PhD in Psycholinguistics from the Aristotle University of Thessaloniki. Her research mainly focuses on the language and cognitive abilities of monolingual and bilingual children with neurodevelopmental

disorders, including autism spectrum disorder and developmental language disorder, and individuals with Broca's aphasia and primary progressive aphasia.

Recently, her research has involved several methods of brain imaging, incorporating carefully designed activation paradigms and brain stimulation techniques, such as transcranial direct current stimulation, to assess changes in the language networks post-intervention in neural degenerative diseases. She has taught undergraduate and postgraduate courses on neurolinguistics and psycholinguistics for the last 9 years. She has participated as a researcher in 14 funded national and international research projects and has published over 100 peer-reviewed papers in international journals, collective volumes, and conference proceedings.

Dr. Inge Stortenbeker

Inge Stortenbeker studied communication and information studies (BA) and language and communication (ReMa) at the Radboud University in Nijmegen.

She successfully applied for research funding at the Netherlands Institute for Scientific Research for a PhD in the humanities in 2017. The PhD was supervised by prof. dr. Enny Das, prof. dr. Sandra van Dulmen, dr. Tim Olde Hartman and dr. Wyke Stommel. In this multidisciplinary project, she studied the role of language use in clinical interactions about medically unexplained symptoms. She defended her thesis on the 3rd of November 2022. She now works as a postdoctoral researcher at the Centre for Language Studies of Radboud University, where she studies the relationship between news reports, social media discussions, and the public perception about cancer screening.

2. Schedule of the site visit

Site visit research review CLCG

Location: Feithhuis

Martinikerkhof 10

9712 JG Groningen <https://www.restaurant-feithhuis.nl/>

December 8	
9.00	First meeting committee, preparations
11.00	Meeting with management: <ul style="list-style-type: none"> ● Dean Faculty of Arts ● Director Graduate School for the Humanities ● Director CLCG ● Policy Officer Research ● Coordinator CLCG ● Member Advisory Board CLCG
12.00	Lunch
13.30	Meeting with senior researchers: <ul style="list-style-type: none"> ● Professor of English Linguistics and English as a Second Language ● Assistant Professor Linguistics ● Associate Professor Linguistics ● Professor by special appointment of Low Saxon / Groningen Language and Culture ● Associate Professor Information Science ● Assistant Professor Language & Linguistics ● Assistant Professor Language & Linguistics
14.30	Break
15.00	Meeting with PhD candidates: <ul style="list-style-type: none"> ● PhD Candidate Communication Studies, Language & Linguistics ● PhD Candidate Second Language Development ● PhD Candidate Semantics, Syntax and Computational Linguistics ● PhD Candidate Language Learning ● PhD Candidate Linguistics ● PhD Candidate Computational Linguistics
16.00	Wrap-up

December 9	
9.00	Meeting with stakeholders (online): <ul style="list-style-type: none"> ● Deputy Manager NUFFIC ● Trauma Surgeon University Medical Center Groningen ● Senior Curriculum Developer SLO ● Computer Linguist INT ● Clinical Specialist Revalidatie Friesland
10.00	Meeting: junior (non-tenured) staff: <ul style="list-style-type: none"> ● Postdoc Computational Semantics ● Assistant Professor Speech and Language Technology ● Assistant Professor in Phonology ● Assistant Professor Communication Studies ● Assistant Professor Language & Linguistics ● Assistant Professor Semantics & Cognition
11.00	Interactive tour buildings: showcasing interesting projects and facilities
13.00	Lunch
14.00	Additional requests or meetings, wrap up, writing session
16.00	First feedback by committee and drinks

3. List of abbreviations

ACL	Association for Computational Linguistics
CIT	Centre for Information Technology
CL	Computational Linguistics
CLCG	Centre for Language and Cognition Groningen
DANS	Data Archiving and Network Services
DISCO	Discourse and Communication
DCC	Data Competence Centre
EMNLP	Empirical Methods in Natural Language Processing
FAIR (data)	Findable, Accessible, Interoperable and Reusable
GETC	Groningen Expertise Center for Language Communication Disorders
GSH	Graduate School for the Humanities
HPC	High Performance Computing
KNAW	Royal Netherlands Academy of Arts and Sciences
NLP	Neurolinguistics and Language Development
NWO	Dutch Research Council
OA	Open Access
RDMP	Research Data Management Plan
SEP	Strategy Evaluation Protocol 2021-2027
SSH	Social Sciences and Humanities
TEL	Theoretical and Empirical Linguistics
TSP	Training and Supervision Plan
UG	University of Groningen
UMCG	University Medical Centre Groningen
VRW	Virtual Research Workspaces