



A document prepared in the context of a research assessment covering the years 2012-2017, JvB, July 13, 2018.

1. Profile and ambition

1.1 Introduction

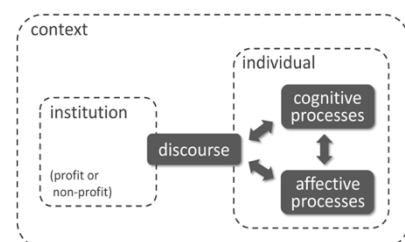
The *Language & Communication* research group (L&C-group), one of the six research groups within the UiL OTS, aims to understand how language is used to get things done in the real world, as well as how such actual, goal-oriented language use can be made more effective, particularly in the communication between institutions and individuals. We analyze the nature of the texts or conversations involved, the cognitive and affective processes they elicit in the language user, and the resulting representations and/or behavior. Group members use a wide range of methods from linguistics, psychology and cognitive (neuro)science, and conduct their research in the laboratory as well as in real-life communicative arena's, the latter often in collaboration with societal partners. The L&C-group is currently composed of 16 tenured researchers, 2 postdoc researchers, and 6 PhD students. Funding comes from university, national and international grants, and societal partners.

1.1 Profile

Language provides an unrivaled means for expressing and understanding complex messages, thereby providing people with a tool that they exploit to serve their local interests or collaborate towards more global gains. The scientific mission of the UiL OTS *Language & Communication* research group is to investigate the characteristics of such functional language use, as well as the cognitive and affective processes and representations that it brings about. Our societal mission is to provide evidence-based guidelines for the design of communication between institutions (e.g., national or local governments, hospitals, financial organizations, other companies) and individuals, such that both parties can manage their own and shared interests in an effective, efficient, and sustainable way. Our research focuses on discourse, the contextualized actual use of language aimed at particular effects, and most typically realized in texts or conversations. Studying language at this level is key to understanding the nature of human communication. Also, many communication problems can only be solved by paying specific attention to such things as the structure, comprehensibility and social-affective ingredients of a text or a conversation, the social context (including relevant cultural differences), the particular medium used, and the cognitive, affective and behavioral consequences of all this.

Within the L&C-group, we work on three interrelated themes:

1. An in-depth, linguistically grounded description of the *discourse*, i.e., how language is actually used in texts and conversations, taking into account the influence of non-verbal elements, the medium employed, and the wider context.
2. A careful analysis of the *cognitive processes* evoked and guided by language during comprehension, and of how these processes give rise to coherent and useful models of the world.
3. A careful analysis of the *affective processes* evoked and guided by language, and that influence people's opinions, attitudes, and behavior, as well as their social relations with other people.



Each of these themes is important on its own, yet studying them together in a single research group has important benefits. Insights derived from an in-depth linguistic analysis of discourse enable a more precise manipulation of language characteristics in experimental studies on the cognitive and affective dimensions of language processing, while the results of such empirical studies can help identify characteristics that are worth particular attention in linguistic discourse analyses. Furthermore, in communication, cognitive and affective processes are usually intimately related, with conscious or unconscious emotion influencing cognitive processes and representations, and with the latter acting as input for the former.

Our research questions within these three themes are derived from both ‘science-internal’ theoretical considerations as well as real societal problems. Our many theoretically driven questions are grounded in – and hence relevant to – linguistics (notably, pragmatics and semantics, text linguistics and stylistics), cognitive and social psychology, cognitive and social neuroscience, and communication studies. Examples of such questions are: (1) how coherence and perspective in discourse are established by linguistic means, (2) how the various mental representations that people construct during an unfolding discourse make contact with emotion systems, (3) how the brain supports the comprehension of indirect speech acts, and (4) through which mechanisms stories influence people’s opinions and attitudes. Although initially driven by theoretical issues, this research is often also relevant for research and evidence-based advice on societal communication issues. For example, our theory-driven research on the use of coherence markers is motivated by a fundamental question on the cognitive perception of discourse coherence, but also leads to evidence-based guidelines concerning sentence length and the use of explicit coherence markers in expository texts for readers with low reading skills. And our fundamental research on how language elicits conscious and unconscious emotional responses and on how this can be recorded via various biosignals (e.g., facial muscle EMG, skin conductance) holds great potential for a more comprehensive assessment of the impact of specific linguistic messages or message types.

A substantial part of the L&C-group’s research is *directly* inspired by societal problems or phenomena. For example, society is increasingly complex but its institutions need to remain accessible to all kinds of societal groups. Because informative texts play a crucial role in this, it is important to be able to predict a text’s readability in a reliable way, and to provide evidence-based recommendations on how to design accessible texts. We have therefore invested heavily in the development of software to predict text readability (*T-Scan*, *LiNT readability tool*). These tools are not only relevant to investigate fundamental research questions on the linguistic properties that relate to text difficulty, but can also directly help improve the accessibility of texts intended to, e.g., inform individuals about health issues, or environmental policies. Other examples of society-inspired research: (1) our work on Voting Advice Applications (how can VAAs increase participation in democracy and help citizens make better voting decisions?), (2) research on the design of financial communication (pension and mortgage information), and (3) research on conversations between patients and health care organizations, with special attention to intercultural understanding. These projects usually incorporate an in-depth study of how the particular ingredients of the texts or conversations at hand are processed by individuals, as well as how the design characteristics of those texts or conversations affect their attitudes or behaviors – all aimed at providing advice on more adequate text designs, conversational techniques or medium choices, which are then implemented. Our group cooperates with many societal partners to develop or conduct this kind of research, to acquire funding, and to disperse the results. Examples: Cito (National Educational Testing Service), Kieskompas (a nationwide Voting Advice institution), Vereniging Eigen Huis (Dutch Home Owners Association), ABN AMRO bank, and the Utrecht University Medical Centre. Also, this society-originated research usually contributes to a deeper understanding of the nature of human communication, and as such feeds back into our theoretical work.

To be able to pursue our common goal of understanding the cognitive and social-affective complexity that is intrinsic to real-world communication, and to provide evidence-based advice towards solving real communication problems, it is vital that the L&C research group has in-house expertise that sufficiently covers these various aspects, as well as a wide range of suitable methods. Our standard methods include various detailed linguistic analyses of corpora of texts and conversations, the registration of response times, eye-

tracking, or cognitive neuroscience measures (e.g., EEG, facial EMG, skin conductance), think-aloud procedures, interviews, and questionnaires. If needed, we develop our own instruments (e.g., an instrument to measure someone's financial literacy, or to evaluate a website). If necessary for experimental control, we conduct research in the lab. If possible, we observe language use in naturally occurring situations, combining this with a careful analysis of the functional context within which the communication takes place. Although most of our theory-driven 'science-internal' research is conducted in Dutch and our societal research frequently addresses specific questions that involve the use of Dutch (either as single language, or, in research on multilingualism, together with other languages), we always aim to increase our understanding of language use at a more generic, language-independent level, next to – if relevant – increased understanding of language-specific issues.

1.2 Ambitions and strategy over the past 6 years

Recent times have seen important developments in the nature of scientific research and its place in society. First, there is a renewed awareness that science operates in the service of society and should as part of that contribute to the solution of real societal problems. Second, and partly because societal problems usually do not respect disciplinary boundaries, there is increasing interaction between scientists from very different research domains, such as the humanities and the social sciences. Finally, within the empirical sciences, there is a large-scale reexamination of science-internal dynamics and a call towards more sustainable and transparent practices (such as replication studies, openly storing and sharing data and open access publishing).

In this changing context, our ambitions over the past six years were to: (1) make a solid contribution to the scientific understanding of functional language use and the various cognitive as well as affective processes that are involved, across a variety of communicative goals (e.g., informing, persuading, sharing) and genres (e.g., expository text, narrative, conversation), (2) conduct societally relevant research of language use in real situations, leading to evidence-based guidelines for the design of more effective communication, (3) ensure that these two research efforts do not develop independently but fuel each other whenever possible, (4) consolidate our relevance to science and society in the coming years, and (5), as part of that, better position ourselves for interdisciplinary research. Our strategy to achieve those ambitions included the following elements:

- Expanding our theoretical and methodological expertise, via recruitment of new tenured staff with specific expertise on narrative persuasion (Hoeken), face-to-face conversation and the associated methodology (Van Charldorp), text-based situation model construction (Eerland), graphics-based communication (Van Weelden), and cognitive neuroscience (Struiksma); (aims 1,2,4,5).
- Recruiting staff whose domain expertise helps us to better address additional societal domains beyond those we already cover (finance, administration, politics, legal, health, intercultural, educational, business), in particular expanding it to the forensic domain (Van Charldorp, Eerland); (aims 2,4).
- Investing in appropriate research tools and methods, such as an EEG-lab and three portable biosignal labs (including the associated analysis pipelines), new eye-tracking equipment, systems for video annotation and corpus analysis, and advanced statistics, e.g., growth curve analysis for eye tracking and biosignal time series; (aim 1, also 2).
- Taking measures to increase cross-fertilization and quality control within the group (as well as beyond), such as via our monthly research meeting *TOP (TaalbeheersingsOnderzoeksPlatform)* and *Project Proposal Meetings*, via frequent attention to Open Science initiatives, encouraging replication studies, and via a considerable contribution to the development of the Institutional Review Board *ETCL*; (aims 1,2,3,4).
- Strongly investing in our connections to the UU's strategic themes and focus areas (notably *Institutions, Dynamics of Youth, Neuroscience & Cognition Utrecht, Future Food, Game Research, and Education for Learning Societies*) and in the definition of new university-wide research networks that are oriented towards societal impact (e.g., *Behavior, Public Policy & Administration, Facts & Reasoning*); (aim 4,5, as well as 1,2,5).

- Investing in collaborations with scholars from other disciplines, such as literary science, history, politics, law, governance, economics, education, psychology, cognitive neuroscience, and the medical sciences (aim 5).
- Engaging in research agenda-setting activities, both nationally via, e.g., new grant funding schemes such as the NWO *Comprehensible Language* program, and internationally, via, e.g., a wide-scope theory of affective language comprehension that provides structure for an emerging research domain; (aims 1,2,4).
- Actively disseminating our expertise to the general public, e.g., via dedicated websites (the [Kennisbank Begrijpelijke Taal](#), [www.luistertaal.nl](#), [www.taalcanon.nl](#), etc), public events, or the media (aim 2).

2. Scientific and societal results 2012-2017

2.1 Scientific results

Many large-scale research grants (at least €100.000) started or were completed in the past 6 years, mainly funded by the Netherlands Organization for Scientific Research (NWO: *Veni, Vici, Gravitation, Begrijpelijke Taal* program), or by societal partners (e.g., *Netspar, Pearson, Stichting Lezen*):

2006-2013	<i>Causality and Subjectivity as cognitive principles of discourse representation.</i> NWO Vici Innovational Research Incentives scheme, € 1,250,000 (acquired by Ted Sanders).
2009-2013	Second language oral fluency: production and perception funded by Pearson Language Testing, € 290,000 (acquired by Ted Sanders, Nivja de Jong)
2010-2014	Research Grant from the <i>Dutch Association for Libraries</i> , for the project <i>Children's Search strategies and interface design</i> , € 150,000 (acquired by Theo Huibers (Twente U) and Ted Sanders).
2011-2014	Research Grant Dutch Reading association (<i>Stichting Lezen</i>) for a phd-project on the processing and comprehension of study book texts, € 150,000 (acquired by Ted Sanders).
2011-2017	<i>Moving the language user - Affect and perspective in discourse processing.</i> NWO Vici Innovational Research Incentives scheme, € 1,500,000 (acquired by Jos van Berkum).
2012-2016	<i>LIN: A validated reading level tool for Dutch.</i> NWO Begrijpelijke Taal scheme, € 376,375, partners: CITO group, Dutch Language Union, Radboud University Nijmegen (acquired by Ted Sanders, Henk Pander Maat).
2012-2016	<i>Reading behavior in advanced age: Do older adults become incoherent readers??</i> NWO Veni Innovational Research Incentives scheme, € 246,000 (acquired by Arnout Koornneef).
2012-2016	<i>Voting Engagement Tools as political decision aids. Effects on political literacy and political attitudes.</i> NWO Begrijpelijke Taal scheme, € 155,843 (UU-part; acquired by Bregje Holleman).
2012-2017	<i>Multimodality and Tailoring Complex Financial Information.</i> NWO Begrijpelijke Taal scheme, € 300,000 (acquired by Leo Lentz, Henk Pander Maat). Co-funded by ABN-AMRO.
2013-2017	<i>Modeling discourse entities and relations for coherent machine-translations</i> , research grant for MODERN-project from the Swiss Science Foundation; consortium with IDIAP (Martigny, CH) and U of Zürich (CH), € 283,000 for the Utrecht part of the project (acquired by Ted Sanders and others)

- 2013-2017 *Individual development: Why some children thrive, and others don't.* NWO 'Zwaartekracht' Gravity scheme, € 540,000 (acquired by Jos van Berkum in the context of a national consortium of PI's).
- 2014-2018 Research Grant from Netspar for the project *Preparing for retirement: tailoring, literacy and effective pension communication.* Funded by Netspar, the Dutch Network for studies on pensions, aging and retirement, € 123,700 (acquired by Leo Lentz)
- 2014-2018 *On the same wavelength: How does language help our minds resonate in synchrony?* NWO Veni Innovational Research Incentives scheme, € 246,000 (acquired by Suzanne Dikker).
- 2015-2017 *Language in court: How linguistic factors influence decision making.* NWO Veni Innovational Research Incentives scheme, € 246,000 (acquired by Anita Eerland).
- 2016 -now Utrecht University research infrastructure grant for AnnCor-project, together with the Language, Logic and Information group (Odijk) and the Language Structure, Variation and Change group (Van Koppen, Project Leader); our group does the *Discourse Annotation*, € 558,000 (acquired by Van Koppen, Odijk, Sanders).

The science-internal impact of the L&C-group in this evaluation period has been both considerable and highly diverse. For example, over the past six years, the group has published some 150 articles in internationally peer-reviewed journals in different fields of linguistics (e.g., *Journal of Pragmatics, Linguistics, Theoretical Linguistics, Discourse Processes, International Journal of Multilingualism, Applied Linguistics Review*), psychology (e.g., *Cognitive Science, PLOS One, Perspectives on Psychological Science, Language and Cognitive Processes*), cognitive and social neuroscience (e.g., *Cerebral Cortex, Frontiers in Human Neuroscience, Journal of Neuroscience, Neuropsychologia, Social, Cognitive & Affective Neuroscience*) and communication studies (e.g., *Human Communication Research, Journal of Communication, Public Opinion Quarterly, Journal of Writing Research*), in scientific journals specifically oriented towards the Dutch readership (e.g., *Tijdschrift voor Taalbeheersing*), and in international scientific journals oriented towards particular societal domains (e.g., *European Journal of Criminal Policy and Research, Health Education Journal, Journal of Educational Psychology, Survey Research Methods, International Journal of Bank Marketing, Journal of Advertising, Journalism and Mass Communication Quarterly*). In line with our aim to intertwine our theory- and society-driven research where we can, several of the above academic journal publications have come out of society-driven research that involved collaboration with and/or funding by societal partners.

Our solid academic contribution is also indexed by various contributions to international handbooks (e.g., *Routledge Handbook of Stylistics, Oxford Handbook of Psycholinguistics, Oxford Handbook of Neurolinguistics, Cambridge Handbook of Psycholinguistics, Human Language* at MIT Press, *Oxford Research Encyclopedia of Communications*). Furthermore, over the past six years, group members have edited several books or special issues of journals (e.g., *Journal of Pragmatics* 2012, with Sanders & Stukker; *Applied Linguistics Review* 2014, with Ten Thije), and have (co-)organized various conferences, symposia and workshops (including, e.g., the *12th International Conference on Functional Pragmatics* in 2016, the 2017 workshop *How language and social cognition shape cooperation*, the 2017 *Closing conference of the Comprehensible language NWO program*, and three *Cognition in Surveys* symposia as part of the European Conference for Survey Methodology 2012, 2015, and 2017). Within the context of the NWO national funding scheme *Begrijpelijke Taal (Comprehensible Language)* that was for a large part initiated and coordinated by our group, we have also invested in updating a national database for sharing information on comprehensible language with other scientists (and communication professionals; *Kennisbank Begrijpelijke Taal*), as well as in the development of tools for the scientific analysis of text complexity (*T-scan*); see section 6 for a case study on our work in this funding program.

As for marks of recognition of our research from peers, members of our research group have over the past six years been serving on the board of various international and national scientific organizations (e.g., president of the *Society for Text and Discourse*, chair of the *Raad voor Nederlandse Taal en Letteren*; chair of the *Dutch Association for Applied Linguistics*), have been successful in various highly competitive grant schemes (e.g., 1 NWO Zwaartekracht grant, 3 NWO Veni grants, 3 NWO *Begrijpelijke Taal* projects, see listing above), have held various editorships or editorial board positions (e.g., *European Journal of Applied Linguistics*, *Journal of Memory and Language*, *Dialogue & Discourse*, *Discourse Processes*, *Language & Linguistics Compass*, *Journal of Writing Research*, as well as the nationally oriented *Tijdschrift voor Taalbeheersing*) and have been invited to give lectures, and to serve on various national and international grant schemes (e.g., European Committee COST scheme, NWO Vidi and Vici committees, *Deutsche Forschungsgemeinschaft*, *National Science Foundation*), and tenure committees (e.g., *Dartmouth University*, *University of California at Davis*, *University of Colorado*). We also hosted many PhD students and visitors who temporarily joined our group on their own grants (appendix 7.3).

Some of our work over the past six years has been specifically aimed at setting the academic research agenda in ways that we deem relevant for the development of the relevant fields. With the *Begrijpelijke Taal* funding scheme and our initiatives to establish a *Network Comprehensible Language*, for example, we have helped prioritize research partnerships between societal partners and researchers on language and communication at the national level. With the recently developed *Affective Language Comprehension model*, a broad theory on how language interacts with emotion, we have aimed to broaden the focus of fundamental research in psycholinguistics and experimental pragmatics. Through the continued work on a cognitive approach to coherence relations we have influenced the increasing interest in developing sound methods for discourse annotation of language corpora. With the recently awarded *ADVANT* KNAW-proposal for the development of advanced verbal and nonverbal interaction analysis tools, we have helped shape the Dutch and European roadmap for advanced research infrastructure. And through board memberships in two international Open Science organizations (*Society for the Improvement of Psychological Science*, *PsyArxiv*) we play a very active role in the transition towards healthier, more viable empirical science practices.

Finally, we have over the past six years initiated many interdisciplinary collaborations with scholars from other disciplines, such as literary study (e.g., on the role of fiction in development, and on assessing readability of literary texts), history, law and governance (e.g., on the history of financial communication about shares and bonds, and the role of government regulation of that communication), politics (e.g., on the role of Voting Advice Applications in democracy), economics (e.g., on pension-related communication), education (e.g., on how to foster perspective-taking in education), psychology (e.g., on how information is transformed in a communication chain), cognitive neuroscience (e.g., on the neural substrate of comprehending indirectness), and the medical sciences (e.g., on food-related communication).

2.2 Societal results

Professional products for society

The societal impact of our work over the past six years has been realized via a wide range of professional products for specific societal partners or domains. For example, our many recommendation-oriented research partnerships with societal partners have led to research-based advice to the national [College ter Beoordeling van Geneesmiddelen](#) on how to simplify standard medication instructions (“bijsluiters”) such that they are more effective while at the same time still in line with European regulations, advice on improving the accessibility of mortgage information (funded by the [Vereniging Eigen Huis](#), the Dutch Home Owners Association), advice on improving the effectiveness of pension information provided by financial institutions (partly funded by [Netspar](#), the Dutch Network for studies on pensions, aging and retirement), advice on question or statement formulation

in Voting Advice Applications (to [Kieskompas](#), and the municipalities of Utrecht and Gouda), advice on how to use narratives to promote healthier lifestyles of truck drivers (for the [Sectorinstituut Transport en Logistiek](#)), forensic-linguistic advice (for the *National Police*), and conversation-analytic advice on optimal conversational turn sequences for 911 emergency call operators (for the [112 Meldkamer Utrecht](#)). In the context of our Master Communication and Organization, carefully supervised student research has led to a large number of recommendations to the national health information dissemination platform [www.thuisarts.nl](#) (an initiative of the [Dutch General Practitioners Society NHG](#)), and projects conducted on site in profit and non-profit organizations also routinely lead to recommendations (at a rate of around 30 per year). We occasionally also provide off-the-shelf consultancy, such as advice on how to communicate with Isis-sympathizers (to the [National Coordinator Counterterrorism and Security](#)), on communication about referenda (to the national evaluation committee for the Ukraine referendum 2016), authorship analysis in threat letters or online communication (for the [Landelijke Deskundigheidsmakelaar](#), part of the *National Police*) and on the use of Lingua Receptiva ('Luistertaal') in the European Union ([policy advice to the European Commission](#)).

We have developed several tools for professionals, including two important software tools to automatically assess text complexity in a principled way: *T-scan*, developed for text professionals and scientists, and the readability tool *LINT*, developed for a wider audience, see for more information (in Dutch) [taaluniebericht.org/artikel/focus/nieuwe-tool-bepaalt-tekstniveau](#)). The tools at hand have been formally presented at a meeting of the [Netwerk Begrijpelijke Overheid](#) (*Network Comprehensible Governmental Communication*, a national organization involving the *Ministry of the Interior and Kingdom Relations* and the [Taalunie](#) (*Dutch Language Union*)), and will be made available at the website of the *Taalunie* later this year.

As for trainings, workshops, textbooks and other course material for professionals, an important product over the past six years has been *Zakelijke communicatie voor professionals*, a professionals-oriented handbook with communication advice, largely written by members of our group. Our research on Lingua Receptiva has led to a training program for the European Commission in Brussels. Furthermore, conversation-analytic research on medical triage conversations (conversations in, e.g., medical posts, aimed at rapid and efficient prioritization of patients) has led to the development of a dedicated conversational training module for [Primair Huisartsenposten](#) and other professional organizations.

A final important professional product of our group has been in the area of networks and funding schemes aimed at science-society research partnerships. In particular, we have played a central role in initiating the national [Netwerk Begrijpelijke Overheid](#), as well as in initiating and coordinating the five-year NWO funding program *Begrijpelijke Taal*, through which 9 partnerships between research teams and societal partners in The Netherlands have been made possible. In November 2016, we chaired a successful closing conference of the program (information in Dutch can be found [here](#), [here](#), and, for a video, [here](#), see also the section 6 case study).

Finally, we note that, although not strictly part of our research activities, one of our main contributions to society occurs via our successful (and nationally top-rated) MA-program *Communication and Organization*, which delivers dozens of highly trained communication professionals to Dutch society each year, as well as via our participation in the new MA-program *Intercultural Communication*, which focuses on communication skills and policies in an ever more diverse society.

Popularizing products for society

Our societal impact has also been realized through popularizing products for a more general audience. For example, members of our group have initiated a website dedicated to disseminating information on Lingua Receptiva ('luistertaal') within The Netherlands and other European countries ([www.luistertaal.nl](#), [English-language variant](#)), as well as a website partly aimed at disseminating information about readability research to language professionals working in the field ([Kennisbank Begrijpelijke Taal](#)). L&C-group members have given

lectures aimed at the general public (e.g., *De Veerstichting*, *Chicago Ideas Week*, *Museum Jeugd Universiteit (Rijksmuseum Boerhaave)*, *Brain Games (National Geographic Channel)*), have contributed to popularization websites (e.g., taalcanon.nl, dekennisvanu.nl), have organized debates with societal partners (e.g., Utrecht city council), and have discussed or demonstrated our research at many events (e.g., *Lowlands* music festival, *Drongo* language festival, *Spui25*, festival *De Beschaving*, *Kennis van Nu Science Café*, *Nationale Wetenschapsagenda*, *Innovation Expo*, *World Science Festival (New York City)*) and in various venues, such as schools (e.g., *Meet the Professor*; *Rector's League*) or musea (*Nemo Science Museum*, *American Museum of Natural History*). Our research has featured in the media frequently (e.g., national TV, radio, newspapers and general magazines, popular science magazines). Finally, we have on several occasions mixed popularization with actually doing research, by recruiting participants for cognitive neuroscience experiments on communication at the [Lowlands festival](#), *Nemo Science Museum*, and *The American Museum of Natural History (New York)*, among others.

Indicators of the use and recognition of our research by societal target groups include the many research projects that we (and our MA-students) have conducted in collaboration with, or that have been funded by, societal target groups (see above).

3. Evaluation

Looking back over the past six years, we have on the whole been successful in realizing our ambitions. Our theory-guided research on the nature and impact of language in use has yielded many publications in international, high-impact peer-reviewed journals as well as renowned handbooks. Our societally relevant research on language use in real situations has reached many corners of society, in the form of evidence-based recommendations, tools, course materials, websites, media contributions, etcetera -- all aimed at contributing to a more inclusive, open society whose citizens do not face unnecessary communication barriers. Much of this research has been interdisciplinary (or 'translational') in nature, based on interdisciplinary expertise in the research group itself, and/or on collaboration with scholars from other disciplines. We have also been able to fruitfully blend fundamental and society-oriented research, such that many research projects that started from concrete societal problems and involved societal partners have also led to publications in high-quality academic journals, and such that theoretical ideas and the associated analysis frameworks/tools developed by us have also helped us address societal issues in a scientifically principled way. Of course, not all theory- or society-guided research lends itself to such immediate blending; some of our societal research is relatively practically oriented, and some of our theory-guided research is highly fundamental, and as such an investment in human culture (which highly values the understanding of human nature), as well as in our future power to address the needs of society.

Our continued investment in fundamental research, and in interdisciplinary collaboration with scholars from other disciplines, can be seen as part of our default strategy to ensure our relevance to science and society in the coming years. Our investment in sound ethical procedures and Open Science initiatives should be seen in the same light, as only ethically and transparently conducted, widely shared science will in the long run be viable. Another step via which we have increased our viability has been to expand the broad spectrum of expertise available in the research group. Apart from reflecting developments in science, it is an absolute advantage to our societal mission, as it allows us to more flexibly respond to the wide range of communication problems faced by society, now, and in the coming years. A unique signature of our profile is that the group combines expertise on the cognitive and affective processing aspects of linguistic communication with sound linguistic knowledge of conversational structure as well as (narrative as well as expository) text structure, and has a good balance between staff that was originally trained in linguistics, in communication science, and in cognitive psychology or cognitive neuroscience.

4. Context

The research group is one of six in the *Utrecht Institute of Linguistics OTS*. In the years 2012-2017, funding of our group has come from central university funds (1e GS, 44%), NWO- or related science funding schemes (2e GS, 41%), and research contracts with societal partners (3e GS: 15%). Group management consists of a coordinator at the full professor level, an assistant-coordinator chosen such that important areas of expertise (science-internal as well as society-oriented research) are covered by the two sufficiently, and a special coordinator for the project proposal meeting. Some of our members also frequently act in, or collaborate with members from, other UiL OTS research groups (notably *Language & Education*, but also, e.g., *Language Processing & Language Pathology*). We actively participate in various strategic themes and focus areas of Utrecht University, notably *Institutions for Open Societies*, *Dynamics of Youth*, *Neuroscience and Cognition Utrecht*, *Future Food*, and *Education for Learning Societies*. Within the strategic theme *Institutions*, we are specifically involved in the society-oriented theme area *Behavior, Public Policy and Administration*, as well as in the recent theme area initiative *Facts and Reasoning*. Group members teach in a wide range of programs (e.g., the BA-programs *Communicatie & Informatiewetenschappen*, *Nederlandse Taal en Cultuur*, *Taal- en Cultuurstudies*, *Liberal Arts and Sciences*, the MA-programs *Communicatie en Organisatie* and *Interculturele Communicatie*, the RMA-programs *Linguistics* and *Neuroscience & Cognition Utrecht*), and also play a faculty-wide role in promoting knowledge about brain science amongst humanities scholars. Also, over the past six years, several of our group members have served in administration at the Faculty or Department level (vice-dean Humanities Faculty Graduate Program, Chair of Faculty Council, head of Department Languages, Literature & Communication).

The PhD training in our group benefits from the supervision and quality control systems of the UiL OTS and the Graduate School Humanities Utrecht (see general UiL OTS report for more information). PhD candidates in our group are typically recruited from Language & Communication Research masters in the Netherlands, from the Utrecht research master Linguistics, and from the local academic MA-programs.

5. Research integrity, ethics and research data management

Over the past 6 years, the Language & Communication research group has invested considerable time and effort in various forms of science quality control. Members of our staff have been a driving force behind the formation of the UiL OTS Institutional Review Board ([ETCL](#)); we have coordinated the project during its 2-year resource-intensive set-up phase, took the lead in developing a highly articulate set of [ethics guidelines](#) (and associated template informed consent forms) specifically customized to research types conducted at the UiL OTS, and supervised the design and implementation of a [dedicated webportal](#) where researchers can request an ethics evaluation of their study in a standardized and efficient manner. This system is not only now supporting the UiL OTS community, but also serves as a model for the Faculty of Humanities.

Our second contribution to science quality control has been in the area of Open Science initiatives. One of our new tenured research group members is on the executive board of the international *Society for the Improvement of Psychological Science (SIPS)* as well as *PsyArXiv* (an international Open Access platform), and is leading the newly established *Open Science Community* within Utrecht University. We have also just initiated an L&C Open Science theme group, aimed at providing practical support to other members of our group in such things as the preregistration of studies, the persistent archiving of data, and the best road towards Open Access publications. And we have been involved in a national newspaper sequel on preregistration and other aspects of open science.

Two final science quality control ingredients in our functioning as a group are the long-established monthly research group meetings (*TOP, TaalbeheersingsOnderzoeksPlatform*) where we discuss each other's work, as well as the more recently established *Project Proposal Meeting* format, a meeting that can be called by individual staff members to gather peer feedback from the group on *planned* research.

6. Case study: three research projects at the interface of science and society

During this evaluation period, three substantial research projects in our group investigated fundamental issues in the field of language and communication, while at the same time tackling apparent communicative problems in society. All three projects are examples of public-private collaboration, both in terms of research funding and in terms of joint research.

Project 1. A first, collaborative project with the University of Amsterdam, focused on Voting Advice Applications (VAAs), which have become a central feature of today's politics in The Netherlands. Societal partners were a VAA-company (KiesKompas), a governmental advice council (WRR) and Utrecht city council. Earlier research had suggested that VAAs affect the intention to cast a vote, and can affect what people vote. This project investigated which types of citizens are affected by VAAs, and to what extent their political attitudes and intentions are based on political literacy and on an increased understanding of the political landscape. Furthermore, it showed how linguistic form of the questions, as well as content features of VAAs, affect citizens' answers, thereby influencing political understanding, political attitudes, and decision-making. The research team combined expertise on the pragmatics of questions and answers and document design (Utrecht) with political science and communication science (Amsterdam). Methods included large scales surveys, qualitative user observations, as well as more fine-grained measures, experimental work on VAA-use. Building on earlier work, the results contributed to a cognitive model of question-answering.

WRR

WETENSCHAPPELIJKE RAAD VOOR HET REGERINGSBELEID

Kieskompas



Gemeente Utrecht

Project 2. A second project investigated people's understanding of complex financial products such as pensions and mortgages. Societal partners were three major parties in the financial market: ABN AMRO, Zwitserleven and Achmea. Consumers need to find their way in a varied landscape of documents and internet tools on the one hand and telephone and face-to-face consultations on the other hand. This project investigated how the design of a Multimodal Information Environment affected consumers' product understanding. The focus was on clients' decision making processes on long term financial arrangements. After exploring the current design of the information environment, communication problems were diagnosed. Then, interventions were designed and tested. These included improved documents and tools and advice to counselors doing consultations. Theoretically, the project was innovative for the combination of two rarely combined traditions in discourse research: discourse processing and conversation analysis. Furthermore, it contributed to a theory of multimodality by analyzing the sequential interplay of different communicative modalities in a longer decision making process.



achmea

Zwitserleven

Project 3. In a third project a new readability tool for Dutch (the *LiNT* readability tool) was developed. Societal partners were Cito (Educational Testing Service), and the Dutch Language Union. Although there has been an urgent need for robust readability assessment tools, so far, none of the existing tools for Dutch offered a valid empirical basis and sufficient functionality. Recent developments in computational linguistics and discourse processing now created possibilities to change this situation. A validated reading level tool was developed, based on experiments with secondary school readers and adult readers of public information. First, the linguistic-analytic tool T-Scan was developed and used to analyze texts on lexical, grammatical and discourse levels. Second, cloze comprehension data were collected among secondary school readers, in a design assessing both

differences between texts and between versions of the same text. Third, a subsample of the texts was used to investigate on-line processing in eye-tracking studies. The combination of comprehension data and on-line processing measures provided insights in the way textual features affect the construction of cognitive representations. Finally, the relation between cloze data and reading times on the one hand, and text features on the other hand, was analyzed in a multilevel regression analysis and in a machine learning study. Together, these analyses gave rise to a reading level prediction tool. This validated reading tool is relevant to various domains in society: education, publishing, government-citizen communication. It provides the foundation for developing domain-specific readability and writing tools that have been missing so far. At the same time, the results reveal fundamental insights in lexical, grammatical and discourse level complexity, and in the way this affects both reading and comprehension. These results contribute to the field of discourse processing and representation, while the specially developed cloze-test is important for measuring text comprehension.



taal:
unie

Beleids- en kennisorganisatie
voor het Nederlands

These three projects were selected in an open competition, funded under a nationwide program, [*“Comprehensible language and Effective communication”*](#), co-founded by three research funding agencies (the boards of NWO Humanities and NWO Social Sciences, and the Health-oriented program ZonMw) and various societal partners. This program was the result of an initiative taken by two of our group members, together with three colleagues from other Dutch universities, in 2010. The goal was to provide funding for innovative fundamental and applied research on this theme, together with societal partners. In total, societal partners and universities together contributed an amount of approximately € 1,313,000 (both in cash and in kind) to a total program budget of € 2,115,000. Finally, following an open call for proposals in 2012, 9 research projects, with over 20 associate partners, were selected for funding. Our group was involved in four of these, including the three described above. During the program, a joint effort with the *Ministry of the Interior and Kingdom Relations* and the *Dutch Language Union* resulted in the establishment of the *Network Comprehensible Governmental Communication*, while the already existing *Begrijpelijke Taal* network on comprehensible language between professionals and researchers received a boost. This success has further strengthened our position as a center of fundamental research with societal impact.



7. Appendices

7.1 Members of the L&C research group (status on December 31, 2017)

Jos van Berkum (full professor)
Michael Burke (full professor, University College Roosevelt)
Tessa van Charldorp (assistant professor)
Suzanne Dikker (postdoc)
Anita Eerland (postdoc)
Sanne Elling (postdoc)
Jacqueline Evers-Vermeul (assistant professor; also member of the Language & Education group)
Marloes Herijgers (PhD student)
Jet Hoek (PhD student)
Hans Hoeken (full professor)
Bregje Holleman (assistant professor)
Paul van den Hoven (full professor)
Daniel Janssen (associate professor)
Suzanne Kleijn (PhD student)
Leo Lentz (full professor)
Pim Mak (assistant professor)
Hanny den Ouden (assistant professor)
Henk Pander Maat (associate professor)
Nina Sangers (PhD student)
Ted Sanders (full professor)
Andrea Santana (PhD student)
Jan ten Thije (associate professor)
Marijn Struiksmā (assistant professor)
Lisanne van Weelden (assistant professor)
Yipu Wei (PhD student)

7.2 Past members of the L&C research group (2012-2017)

Hans-Rutger Bosker (PhD student)
Anneloes Canestrelli (PhD student)
Hannah De Mulder (postdoc)
Bjorn 't Hart (PhD student)
Frank Jansen (assistant professor)
Hanna Jochmann-Mannak (PhD student)
Nivja de Jong (assistant professor)
Naomi Kamoen (PhD student)
Arnout Koornneef (postdoc)
Rogier Kraf (PhD student)
Anne van Leeuwen (PhD student)
Fang Li (PhD student)
Louise Nell (PhD student),
Gerdineke van Silfhout (PhD student)

7.3 Externally acquired PhD-project or visitor grants, spent while studying in or visiting the L&C-group

2009-2012	NUFFIC PhD-project grant for Fang Li, supervised by Sanders, Mak and Evers-Vermeul.
2011-2013	EC-grant for Dr. Sandrine Zufferey (U of Geneva, CH), Marie-Curie Postdoctoral Research Fellowship (acquired by Zufferey)
2013-2016	China Scholarship Council PhD-project Grant for Yipu Wei, supervised by Sanders, Mak and Evers-Vermeul
2014-2018	PhD-project grant from Becas-Chile from the National Commission for Scientific and Technological Research (CONICYT-CHILE), awarded to Andrea Santana. Sanders, Supervision
200??-20??	China Scholarship Council grant for <i>visiting scholar</i> Dr. Chen Weying (Zhejiang U), 2012; Sanders, supervision
spring 2014	Visiting Scholar Fernando Moncada (Valparaiso, Chile) on causality in discourse, with a grant from the Chilean research agency
spring 2014	Visiting Scholar Ines Recio (Heidelberg, Germany) with a DAAD-grant from DFG, on discourse coherence and connectives
2012-2017	Three Grants for Short Term stays from China (from UU-funding), as well as various Short Term Scientific Mission Grants from EU-Cost-funding, among them Dr. Vera Demberg (Saarbrücken U), and PhD's and postdocs from Romania, Belgium, Germany and Turkey

7.4 List of publications 2012-2017

See separate document