Dr. Matt Coler

CONTACT
INFORMATION

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University of Groningen
Campus Frsylân
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RESEARCH
INTERESTS

I adopt interdisciplinary and transdisciplinary approaches to solve scientific and societal problems. My main research interests include: **language technology** (speech analysis, speaker-state detection, prosodic and paralinguistic phenomena), **linguistics** (agglutinative morphology, subtractive disfixation, Amazonian/Andean languages, minority language doucmentation), **cognition** (sensory perception, semiotics, phenomenology, soundscapes)

EDUCATION

Free University Amsterdam, NL

Ph.D. in Linguistics. 2010.

Free University Amsterdam, NL

M.A., Linguistics *cum laude.* 2006

New York Univeresity, NY, USA

Graduate studies, Linguistics. 2004

University of Massachusetts, MA, USA

B.A., Philosophy, minor in Mandarin Chinese. 2001

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PROFESSIONAL
EXPERIENCE

University of Groningen / Campus Fryslân – Ljouwert, NL

Associate Professor, Language & Technology **07/2020 – present**

Assistant Professor & Research Program Manager **09/2016 – 06/2020**
Within the *Governance & Innovation* unit, served as Program Manager for the Culture, Language & Tech Flagship, developed the Voice Technology MSc., designed, coordinated, and instructed 3 courses in the Global Responsibility & Leadership BSc. University College Fryslân, collaborate on the Multilingualism Center of Excellence initative with the Frisian Academy, acquired University Teaching Qualifications (UTQ/BKO), supervising/supervised 10 PhD students. Additionally, Chair of the Ethical Committee, member of the Admissions Board, and Open Access Ambassador.

Innovation Center for Sensors & Sensor Systems – Assen, NL

Department Head, Cognitive Systems **01/2012 – 12/2016**
Managed team of PhDs, postdoctoral researchers and senior scientists to develop acoustic sensors on projects relating to cochlear implants and acoustic event detection. Transformed research projects to market products, acquired financing for research, co-authored patents.

HvA University of Applied Sciences – Amsterdam, NL

Lecturer **06/2011 – 01/2012**
Coordinated and taught courses on research methods, management, and business English.

Free University Amsterdam – Amsterdam, NL

Postdoctoral Researcher   **01/2011 − 05/2011**
Designed and implemented a language database to model phonetic and phonological phenomena relating to nasal harmony in highly-endangered languages.

Free University Amsterdam – Amsterdam, NL

PhD Researcher   **01/2006 − 12/2010**
Conducted independent fieldwork in the Andean highlands under extremely adverse conditions to document an endangered language variant. Results are published in Coler (2014).

ADDITIONAL AFFILIATIONS	Associated Member, CNRS UMR 2563 – CLLE-LTC Cognition, Langues, Langage, Ergonomie – Laboratoire Travail et Cognition; CNRS Délégation Midi-Pyrénées: Toulouse, Midi-Pyrénées (FR)

Member, Societas Linguistica Europaea (EU)

Expert Panelist (Cultural Anthropology & Linguistics), NSF (USA)

Consultant, Science & Entertainment Exchange – US National Academy of Sciences (USA)

GRANTS	H2020-MSCA-RISE-2017 - COLING. 1.58M€ of which 189k€ is for my team. – Additional funding provided to send all my PhD students to the Smithsonian Institute (Washington, D.C.) for up to six months each. Additional funding to facilitate student/staff exchange at international partner institutes. I serve as a member of the Steering Committee and as a Work Package Leader.

H2020-FET-Open - Phoenix: Exploring the Unknown through Reincarnation and Co-evolution. 3.6M€ of which 237k€ was for my team. Project involves developing successive generations of evolving hardware to explore inaccessible environments. I was Work Package Leader and Management Team Member. Completed in 2019.

Polish Science Foundation TEAM - Language as a cure: linguistic vitality as a tool for psychological well-being, health and economic sustainability. 814k€. Completed in 2019.

Interreg VA ID3AS - Acoustic event detection. 9.75M€ of which 200k€ was for my team. Completed in 2018.

ACADEMIC LEADERSHIP	Award Committee Member, GUF-100 prize for Campus Fryslân alumnus (2020)

Expert Panelist for National Science Foundation (2014, 2015, 2019)

H2020 Evaluator for Research Executive Agency / European Commission (2018, 2019)

Reviewer for many A-level scientific journals

Management Team & Work Package Leader, H2020-FET-Open - Phoenix (H2020-FET-Open)

Founding Member, Centre for Research & Practice in Cultural Continuity

Steering Committee & Scientific Coordinator, COLING (H2020-MSCA-RISE-2017)

Scientific Board, Polish Science Foundation TEAM grant, Language as a cure: linguistic vitality as a tool for psychological well-being, health and economic sustainability

Scientific Committee Member of Engaged Humanities: preserving and revitalizing endangered lan-

guages and cultural heritage (Twinning Project H2020 -ENGHUM2017)

Program Committee for *1st joint spoken language technologies for under-resourced languages* and *Collaboration and computer for under=resourced languages*, a joint Special Interest Group of ELRA and ISCA. Pre-conference workshop for LREC 2020.

Scientific Advisory Board, Scientific Advisory Board Member, Foundation ICT for Brain, Body & Behavior i3b Foundation, Wageningen

Serve on Defense Jury for many PhD defenses: 2011 (x2) 2015 (x1), 2016 (x2), 2017 (x2), 2018 (x1), 2020 (x1)

Chair of Ethics Committee, Campus Fryslân (2018–present)

Open Access Ambassador for Campus Fryslân (2019–present)

Admissions Board Member University College Fryslân (2018–present)

Chair, Committee Member and/or Panelist of multiple international conferences, including SLTU-CCURL at LREC-2020 "Spoken language tech for under-resourced languages", ICLaVE-10 "Diaspora languages" (2019), COLING "Language Tech for Minority Languages" (2018-2019), EvoStar2017, EuroNoise 2015 (soundscape session), Big Data CEEDS (2013) Google, London, etc.

TEACHING & SUPERVISION

- Course coordinator & Lecturer at University College Fryslân - Language & Culture II (2020)
- Course coordinator & Lecturer at University College Fryslân - Language & Culture I (2019)
- Lecturer at University College Fryslân - Academic Communication (2018)
- Lecturer at the Technical University Eindhoven - Knowledge representations (2015)
- Lecturer at the Free University Amsterdam - Anthropolgical Linguistics (2012)
- Lecturer at the HvA Amsterdam University of Applied Sciences (2011-2012)
- Supervisor of postdoctoral researchers, PhDs, Master's, undergraduates, interns and research assistants (2013-present)
- Invited speaker at dozens of specialist conferences worldwide

PHD STUDENTS

- P. Do - Uni of Groningen. Defense: 2024.
- C. Sandoval - University of Lisbon. Defense: 2024.
- Y. Wang, Faculty of Arts - Uni of Groningen. Defense: 2023.
- G. Pinto de Faria Junior, Dept. of Linguistics – VU Amsterdam. Defense: 2021.
- V. Verkhodanova, Campus Fryslân - Uni of Groningen. Defense: 2021.
- J. Amelsvoort, Campus Fryslân - Uni of Groningen. Defense: 2021.
- V. Boswijk, Campus Fryslân - Uni of Groningen. Defense: 2021.
- B. Dijkstra, Campus Fryslân - Uni of Groningen. Defense: 2021.
- M. Everhardt, Center for Language and Cognition – Uni of Groningen. Defense: 2022.
- A. Yaman, Dept. of Mathematics & Computer Science, Technical Uni Eindhoven. Defended in 2019.
- E. Bild, Dept. of Human Geography, Uni of Amsterdam. Defended in 2019.

PUBLICATIONS: BOOKS	**Coler**, M. (2014). *A grammar of Muylaq' Aymara: Aymara as spoken in Southern Peru*. Brill. Avelino, H., M. **Coler** & Leo Wetzels, *eds.* (2015). *Studies in laryngeal features of the indigenous languages of the Americas*. Brill. Cance, C., M. **Coler** & D. Dubois, *eds.* (accepted, forthcoming). *Exploring sensory experiences: A handbook on meaning & the senses*. Benjamins. **Coler**, M. & A. Nevins (accepted). *Linguistic contact with minoritized and diaspora languages of Europe*. Language Science Press.
PUBLICATIONS: CHAPTERS (LANGUAGE & TECHNOLOGY)	**Coler**, M., B. Kaal & E. Banegas-Flores (accepted). Considering nayra 'eye' as an Aymara chronotope. In eds.: R. Zariquiey & P. Valenzuela, *The grammar of body-part expressions: A view from the Americas*. Benjamins. Yaman, A., Iacca, G., **Coler**, M., Fletcher, G., & Pechenizkiy, M. (2018, April). Multi-strategy Differential Evolution, in G. Squillero & K. Sim, eds.: *Applications of Evolutionary Computation*. Springer, Cham. [link] Yaman, A., A. Hallawa, M. **Coler**, G. Iacca (2017). Presenting the ECO: Evolutionary Computation Ontology, in G. Squillero & K. Sim, eds.: *Applications of Evolutionary Computation*. Springer, Cham. [link] Avelino, H, M. **Coler** & W.L.M. Wetzels (2015). Introduction to the laryngeal features of the languages of the Americas, in H. Avelino, M. Coler & W.L.M. Wetzels, eds.: *The phonetics and phonology of Laryngeal Features in the languages of the Americas*. Brill, Leiden. ISBN 9789004303201. [link] **Coler**, M. (2015). Aymara inflection, in M. Baerman, ed.: *The Oxford Handbook of Inflection*. Oxford University Press. ISBN 9780199591428 [link] **Coler**, M. & P. Homola (2014). Rule-based machine translation for Aymara, in M. Jones, ed.: *Endangered Languages and New Technologies*. Cambridge University Press. pp. 67-80. [link]
PUBLICATIONS: CHAPTERS (COGNITION)	**Coler**, M. Perception of Language (in press). In D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins. Dubois, D., C. Cance, M. **Coler** & A. Paté (in press). Empirical considerations for questioning sensory experience. In D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins. Dubois, D., C. Cance, M. **Coler** (in press). Subjects or participants? In D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins. Cance, C., D. Dubois, A. Paté & M. **Coler** (in press). From stimulations to stimuli construction and selection. In D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins. Cance, C., D. Dubois, & M. **Coler** (in press). Making sense of the outcomes: Tools for analysis. In D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins. Dubois, D., C. Cance, M. **Coler** & A. Paté (in press). From perception to sensory experience. In

D. Dubois et al. (in press) *Exploring sensory experiences: A handbook on meaning & the senses*, Benjamins.

Dubois, D., M. **Coler** & H.J. Wörtche (2014). Knowledge, sensory experience, and sensor technology, in C. Rangacharyulu, E. Haven, & B. Juurlink, eds., *The world in prismatic views*. London: World Scientific. pp. 97–134.

Dijkstra, B. E., **Coler**, M., & Redeker, G. (2020). The multilingual workplace realities of Polish truckers: A case study in the Netherlands, *Multilingua* (published online ahead of print 2020), 000010151520200038. [doi]

Coler, M & N. Emlen. Vowel deletion in two Aymara varieties. (2020). Kuznetsova & Anderson, eds. *The dynamics of vowel reduction and loss in phonetics and phonology*, thematic issue of the *Italian Journal of Linguistics*.

Everhardt, M. K., Sarampalis, A., **Coler**, M., Başkent, D., & Lowie, W. (2020). Meta-Analysis on the Identification of Linguistic and Emotional Prosody in Cochlear Implant Users and Vocoder Simulations. *Ear and Hearing* 41:5, p. 1092-1102 11. [link]

Yaman, A., Mocanu, D. C., Iacca, G., **Coler**, M., Fletcher, G., & Pechenizkiy, M. (2019). Evolving plasticity for autonomous learning under changing environmental conditions. *arXiv preprint* arXiv:1904.01709. [link]

Everhardt, M., Sarampalis, A., **Coler**, M., Başkent, D. & Lowie, W. Perception of L2 lexical stress in words degraded by a cochlear implant simulation. Jul-2019, *Proceedings of the 19th International Congress of Phonetic Sciences.* [link]

Coler, M., Valenzuela, P. & Zariquiey, R. (Eds.) Indigenous Peruvian Voices – TILA – *International Journal of American Lingusitics.* 2018. [link]

Banegas-Flores, E. and M. **Coler**, Aymara, *International Journal of American Linguistics* 84, no. S1 (April 2018): S165-S185.[link]

Coler, M. The Grammatical Expression of Dialogicity in Muylaq' Aymara Narratives. *International Journal of American Linguistics* 80(2): 241-265. [link]

Coler, M. & E. Banegas-Flores. A descriptive analysis of Castellano loanwords in Muylaq' Aymara. *Línguas Indígenas Americanas* 13-2013: 101-113. [link]

Da Hora, D. & M. **Coler**. A Dispersion-Theoretic account of Brazilian Portuguese rhotic variation. Thematic issue: Phonology – theory and practice. *Linguagem* 02-2005.

Coler, M. An Optimal-Theoretic account of Mandarin Chinese loanword adaptations. *Linguagem* 01-2004.

Boswijk, V., & **Coler**, M. (2020). What is Salience?. Open Linguistics, 6(1), 713-722.[link]

Bild, E., Pfeffer, K., **Coler**, M., & Bertolini, L. (2019). An Exploratory Study on the Influence of Activities on Public Space Users' Descriptions of Their Auditory Environments on Site: The Case of Amsterdam. *Acta Acustica united with Acustica*, 105(3), 449-463. [link]

Bild, E. M. **Coler**, K. Pfeffer & L. Bertolini (2016). Considering Sound in Planning and Designing Public Spaces: A Review of Theory and Applications and a Proposed Framework for Integrating

Research and Practice. *Journal of Planning Literature.* [link]

CONFERENCE PROCEEDINGS (LANGUAGE & TECHNOLOGY)

Verkhodanova, V., Trčková, D., **Coler**, M., & Lowie, W. (2020, October). More than Words: Cross-Linguistic Exploration of Parkinson's Disease Identification from Speech. In International Conference on Speech and Computer (pp. 613-623). Springer, Cham.

Everhardt, M., Sarampalis, A., **Coler**, M., Başkent, D. & Lowie, W. 2020. *Processing of prosodically marked focus in a cochlear implant simulation by non-native listeners: An experiment design.* In 2pSCa, Listening in Challenging Circumstances II. Chicago, USA.

Verkhodanova, V., **Coler**, M., Jonkers, R., de Bot, K. & Lowie, W., Aug-2019, *Prosodic Changes in the speech of a single speaker with Parkinson's Disease.* In the Proceedings of the 19th International Congress of Phonetic Sciences. Calhoun, S., Escudero, P., Tabain, M. & Warren, P. (eds.). Melbourne, Australia: International Phonetic Association, p. 3046-3050 5 p.

Verkhodanova, V., Timmermans, S., **Coler**, M., Jonkers, R., de Jong, B., & Lowie, W. (2019, August). *How Dysarthric Prosody Impacts Naïve Listeners' Recognition.* In International Conference on Speech and Computer (pp. 510-519). Springer, Cham.

Everhardt, M., Sarampalis, A., **Coler**, M., Başkent, D. & Lowie, W. *Perception of l2 lexical stress in words degraded by a cochlear implant simulation* , Jul-2019, (Accepted/In press) Proceedings of the 19th International Congress of Phonetic Sciences(ICPhS).

Everhardt, M., M. Coler & W. Lowie (2016). *Shhh! A study comparing the production of whispered segments by Dutch L2 speakers of English and native L1 speakers.* New Sounds 2016. Aarhus University, Denmark.

Nota, A., N. Hilton & M. **Coler** (2015). *MAS+: An adapted methodology in the context of Frisian-Dutch prosody.* De dag van de Fonetiek 2015: Over onderzoek naar spraak en spraaktechnologie, Utrecht, the Netherlands.

Coler, M., P. Guyot & E. Bamegas-Flores (2015). *An ethnomusical and linguistic description of the Añasita song as sung by the Aymara of Muylaq'i.* European Network for the Study of Andean Languages, Leiden, the Netherlands.

Nota, Amber, N. Hilton and M. **Coler** (2014). Language contact and intonation patterns: the case of Frisian and Dutch. XX Conference on Frisian Philology, Leeuwarden, the Netherlands.

Homola, P. & M. **Coler** (2013). Information structure as the common base for languages in contact. Multilingual Fryslân. Leeuwarden, the Netherlands.

Homola, P. & M. **Coler** (2013). *Causatives as complex predicates without the restriction operator.* Lexical-Functional Grammar Conference (published by CSLI, Stanford distributed by Chicago University Press, eds. M. Butt & T. Holloway King), University of Debrecen – Debrecen, Hungary.

Homola, P. & M. **Coler** (2013). *Pragmatic Structures in Aymara.* Proceedings of the Second International Conference on Dependency Linguistics (DepLing 2013), Charles University, Prague, Czech Republic.

Homola, P. & M. **Coler** (2013). *Machine Translation as a language tool. Presented at Language Endangerment: Methodologies and New Challenges*, CRASSH, Cambridge University, Cambridge, UK.

Coler, M. (2011). *A comparative sketch of Muylaq' Aymara. European Network for the Study of Andean Languages*, Max Planck Institute. Leipzig, Germany.

Coler, M. (2009). *Participatory documentation methodology.* International Conference on Language Documentation and Conservation (ICLDC-1), University of Hawaii (Manoa), Honolulu, Hawaii, USA.

Coler, M. (2009). *Preliminary insight into Muylaq' Aymara.* Conference on the Endangered Languages and Cultures of North America (CELCNA), University of Utah, Salt Lake City. USA.

CONFERENCE PROCEEDINGS (COGNITION)

Bild, E., Tarlao, C., Guastavino, C., & **Coler**, M. (2016, August). *Sharing music in public spaces: social insights from the Musikiosk project* (Montreal, CA). In Inter-Noise and Noise-Con Congress and Conference Proceedings (Vol. 253, No. 5, pp. 3657-3666). Institute of Noise Control Engineering.

Gaillard, P., M. **Coler**, J. Tardieu & C. Magnen (2015). *Hybrid sound classification.* Proceedings of EuroNoise 2015 Maastricht, the Netherlands.

Bild. E., M. **Coler**, D. Dubois & K. Pfeffer (2015). *A pilot experiment on effects of motor and cognitive activities on memories of soundscapes.* Proceedings of EuroNoise 2015 Maastricht, the Netherlands.

Dubois, D & M. **Coler** (2014). *Le son pris aux mots ou les mots aux prises avec le sonore: Question de méthodes & Sounds, languages and meanings: Ontologies or Umwelten?* Le son pris aux mots – MILSON, Ecole Nationale Supérieure des Beaux-Arts de Paris, France (ENSBA).

Bild, E., M. **Coler**, H.J. Wörtche (2014). *Habitats Assen Pilot: Testing Methods for Exploring the Correlation between Sound, Morphology and Behavior.* Proceedings of Measuring Behavior 2014, (Wageningen, The Netherlands, August 27-29, 2014), eds.: A.J. Spink, L.W.S. Loijens, M. Woloszynowska-Fraser & L.P.J.J. Noldus.

Coler, M. (2012). *On knowledge, cognition and intelligent sensors.* Presented at the European University of Saint Petersburg. Saint Petersburg, Russia.

Coler, M. (2012). *Expert intelligent systems.* Presented at the CHESS Interactions Conference. Saskatoon, Canada.

PAPERS IN PREPARATION

Boswijk, V., Loerts, H., **Coler**, M & Hilton, N. (submitted) *Word processing in the context of a regional minority language: The case of Frisian.* Bilingualism and the Brain.

Coler, M. (under review). Aymara with comparative notes on Jaqaru. In ed.: Matthias Urban *Guide to the Languages of the Central Andes.* Oxford University Press.

Dakel, P., M. **Coler**, M. Soto Rodrigues, E. Banegas-Flores (in preparation). Aymara and Quechua grammatical mood in Castellano Andino. In eds.: Coler, M & A. Nevins. (under review). *Linguistic contact with minoritized and diaspora languages of Europe.* Language Science Press.

Boswijk, V., M. **Coler**, H. Loerts, N. Hilton. (in preparation) Untangling Lingusitic Salience.

CURRENT PROJECTS (SELECTED)

Voice Technology MSc.: The Voice Technology MSc program will train a new generation of graduates to catalyze the burgeoning development of voice technologies, promoting innovations that radically transform how humans interact with connected devices and the Internet of Things to the benefit of humankind. Achieving this entails situating Europe at the forefront of voice technologies, liberating it from the profit-driven stranglehold of Silicon Valley and private enterprise and into the warm embrace of European academia where research can take the field in radically new directions.

A.I. platform for multilingual colonial texts: Working with Nick Emlen (University Leiden) and Prof. Lambert Schomaker to train an A.I. algorithm (Monk System) to analyze a colonial text known as the *Vita Christi.* This is one of the longest and richest texts ever written in a native South American language by a native speaker. The work is very rare and inaccessible, so this project will make it available to an interdisciplinary range of scholars and to community members themselves together with colleagues from the Digital Humanities.

Perception & Salience in the Brain: Together with PhD Candidate Vincent Boswijk, we investigate linguistic salience and language processing, which touches upon topics such as frequency, linguistic change, and processing load. We focus on the context of the Frisian language, with fMRI experiments that target the effect of word frequency on the processing effort and mapping the neural correlates of sound changes.

Recognizing Parkinson's Disease from Multilingual Voices: Together with PhD Candidate Vass Verkhodanova, we examine speech of patients with Parkinson's Disease (PD) to determine how PD is manifest in speech and how medical experts detect the disease based only on voice. We analyze acoustic cues specific to the speech of multilingual PD patients in several languages to determine on which cues experts rely when diagnosing PD. By bridging speech processing tools and expert knowledge, we seek more insight into production and perception of pathological speech and to develop techniques to automatically detect PD from speech.

ADDITIONAL SKILLS
- Applications: LaTeX, Praat speech analysis software (formant analysis, transcription, melodic analyses, transcription, etc.)
- Certificates: University Teaching Qualification (UTQ/BKO)
- Languages: English (native), Brazilian Portuguese (spoken), American Spanish (spoken), Dutch (intermediate), Mandarin Chinese (rusty)