

# Language Sciences Initiative 2017-2018 Annual Report to the Governing Committee of Deans

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May 2018



THE UNIVERSITY OF BRITISH COLUMBIA

Language Sciences

# Executive Summary

- **Membership**
  - Overall membership increased to 202 members (as of March 2018) from 154 members in 2017.
  - LangSci welcomed 35 new members from 19 other Universities and 3 non-academic institutions (now called Affiliate Members).
- **Leadership and Staff**
  - Ella Fund-Reznicek stepped in as the new Language Sciences Coordinator in July 2017, taking over from Dr. Jen Abel.
  - Dr. Bonny Norton stepped down from her role on the LangSci Steering Committee in November 2017. She retains her position on the Research Leads committee.
  - Dr. Mark Turin (Anthropology, First Nations & Endangered Languages) joined the Steering Committee in January 2018.
- **Financial support**
  - Founding donor Marietta Hurst provided the third installment of her donation.
  - Governing deans: 2016 seed funding for pilot studies
  - Vice President Research & Innovation: 2017 Grants for Catalyzing Research Clusters
  - Vice President Academic & Provost: Undergraduate cross-faculty course development funding (in its third year)
  - 7 Grants received by research leads supporting initiatives catalyzed through the Language Sciences Initiative; additional grants garnered by members through LangSci support.
- **Research strategy and projects**
  - Three broad themes and six sub-themes; research leads from four Faculties
  - Envisioning a Science of Literacy
  - Storybooks Canada/Indigenous Storybooks project
- **University-wide course *Living Language: Science & Society***
  - The course (APSC/ASTU/LFS/LLED/PHAR 402) received full Senate approval in November 2017 and will be offered for the first time in September 2018 to fourth year students from across the university (Winter Term 1). While many students will be able to take it in their own Faculty, others – such as students from Science and Sauder – can take it as a general elective in ASTU.
- **Communication and Knowledge Mobilization**
  - The Language Science Talks series continues this year with two talks in April 2018, another talk series planned for Fall 2018.
  - New website launched using VPRI template in August 2017.
- **Synergetic Initiatives**
  - UBC Senate approved the Master of Data Science in Computational Linguistics in Feb 2018.
  - LangSci co-sponsored the 2<sup>nd</sup> annual undergraduate-led Language Sciences Undergraduate Research Conference (LSURC).
  - The visual language-learning resource eNunciate generated a number of publications, in addition to providing language-learning resources for students at UBC.



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# **Organization**

## **Steering Committee**

Dr. Janet F. Werker (Co-Director)	University Killam Professor & Canada Research Chair	Psychology
Dr. Bryan Gick (Co-Director)	Professor	Linguistics
Dr. Sidney Fels	Professor & Distinguished University Scholar	Electrical & Computer Engineering
Dr. Mark Turin	Associate Professor, Chair	Anthropology, First Nations & Endangered Languages

Dr. Bonny Norton stepped down from the Steering Committee in November 2017 in order to focus on research and spend more time with her family. Dr. Mark Turin joined the Steering Committee in January 2018.

## **Research Leads**

For a full summary of research themes and activities, see [Research](#).

## **Language, Sustainability, and Transnationalism**

Dr. Bonny Norton	Professor & Distinguished University Scholar	Language & Literacy Education
Dr. Shaylih Muehlmann	Associate Professor & Canada Research Chair	Anthropology

## **The Communicating Mind and Body**

Dr. Lara Boyd	Professor & Canada Research Chair	Physical Therapy
Dr. Janet Werker	University Killam Professor & Canada Research Chair	Psychology

## **Evolving Language in an Information Economy**

Dr. Bryan Gick	Professor	Linguistics
Dr. Sidney Fels	Professor & Distinguished University Scholar	Electrical & Computing Engineering

## Governing Committee of Deans

Dr. James Olson	Dean	Faculty of Applied Science
Dr. Gage Averill	Dean	Faculty of Arts
Dr. Blye Frank	Dean	Faculty of Education
Dr. Dermot Kelleher	Dean	Faculty of Medicine
Dr. Simon Peacock	Dean	Faculty of Science

## Staff

Ella Fund-Reznicek	Coordinator
Dr. Sophia van Hees	Research Development Officer

## Members and Affiliates

### Summary of Members

In 2017-2018, the Language Sciences Initiative grew to 202 total members (122 UBC Faculty members, 10 Postdoctoral fellows, 41 graduate students, and 35 members from 19 other universities and 3 organizations). UBC members represent 10 different Faculties and Schools and 36 departments at the Vancouver and Okanagan campuses.

### Member Events

#### **October 3<sup>rd</sup>, 2017: Language Sciences, UBC and Beyond!**

In October 2017, Language Sciences members gathered at St. John's College to hear updates from the Research Leads, learn about visiting scholars' research (see [Visiting Researchers](#)) and brainstorm ideas for engaging with the Greater Vancouver Community beyond UBC. These ideas will inform plans for public roundtables in each research theme area in the fall of 2018.

#### **February 5<sup>th</sup>, 2018: Language Sciences – Dreaming and Building**

Language Sciences members gathered in the Suedfeld Lounge in the Department of Psychology to share specific ideas of how to use the 2018 Grant for Catalyzing Research Clusters to support small interdisciplinary initiatives. The group generated ideas such as holding a cluster-wide mini-conference, developing a seminar on heritage languages, and skills workshops for members. While numerous meetings were held throughout the year by smaller groups of researchers who have coalesced around specific research topics, two new small groups formed as a result of this meeting:

- Faculty and graduate students from LLED, First Nations & Endangered Languages, Anthropology, and Linguistics. This group developed a demonstration of the Indigenous Storybooks project with the Heiltsuk Nation and Heiltsuk Cultural Education Centre in Bella Bella, BC, which will be on display in the UBC Museum of Anthropology as part of the exhibit ‘Culture at the Centre’ from the present until October 18, 2018.
- Faculty members and graduate students in Linguistics and LLED who have research and teaching interests in sign language. This group has met twice since February and is working to establish connections with the Vancouver Deaf community and develop mutually beneficial relationships with native signers.

## **Funding**

### **Donation from Marietta Hurst**

Language Sciences continues to receive support from Marietta Hurst, receiving the third installment of her initial donation in December 2017. This donation provides salary support for the full-time Language Sciences Coordinator position (formerly Dr. Jennifer Abel, currently Ella Fund-Reznicek).

### **Vice President Research & Innovation**

The Language Sciences Initiative received \$200,000 from the Vice President Research and Innovation through the 2017 Grants for Catalyzing Research Clusters competition for its proposal *Language Sciences – UBC and Beyond*, to be spent by December 31, 2018. Funds will support knowledge mobilization efforts

### **Provost’s Office**

Funding from the Vice President Academic and Provost continues to support the development of the University-wide course *Living Language: Science and Society*. In its third year, funding supports the co-instructors’ collaboration with Instructional Designers at the Centre for Teaching and Learning Technologies and salary and benefits for a Graduate Academic Assistant to support the co-instructors during the course design process.

### **Governing Committee of Deans**

In 2017, the Faculties represented by the Governing Committee of Deans (along with the Vice President Research and Innovation) provided seed funding for 14 individual and joint projects from researchers in Anthropology, Asian Studies, Centre for Brain Health, Computer Science, ECPS, IRES, LLED, Linguistics, Music, Neurology, Psychiatry, Psychology, SASS, UBC-O, and Hong Kong Polytechnic University. Updates on these projects’ progress is provided in Appendix 1.



# **Research**

## **Supported Member Projects**

See [Governing Committee of Deans, Appendix: Supported Member Projects](#).

## **Visiting Researchers**

### **Jérémie Voix**

Dr. Jérémie Voix (Associate Professor, Université du Québec, École de technologie supérieure, and President, Canadian Acoustical Association) visited UBC in the fall of 2017, hosted by Dr. Bryan Gick, Dr. Frank Ko (Department of Materials Engineering), Dr. Sidney Fels, and Dr. Peyman Servati (Department of Electrical & Computer Engineering) to advance research contributing to the develop of technologies that can transform the mechanical energy generated by motions of the jaw during eating and speech into electrical power for electronic in-ear wearable devices, such as hearing aids.

In addition to Dr. Voix, three faculty members from the Pontifical Catholic University of Santiago (Chile), using Universitas 21 “Global Research Alliance in Language” funding, visited in October 2017. While here, they connected with researchers in multiple UBC departments to discuss their work and possible points of collaboration. They also presented short talks on their research at the [October Language Sciences member event](#).

### **Marcela Peña**

Dr. Peña’s (Professor, Psychology) research interests include the neuro-cognition of language, social cognition, and infant development. In the past she was worked with Drs. Janet Werker and Ghislaine Dehaene-Lambertz on infant speech exposure and acquisition. Her recent publications include Rhythm in your lips (2016, *Frontiers in Psychology: Language Sciences*, with Langus, Gutierrez, Huepe-Artigas, & Nespor) and Gaze-following is accelerated in healthy preterm infants (2014, *Psychological Science*, with Arias & Dehaene-Lambertz). During her time at UBC, Dr. Peña met with a number of researchers in Psychology and Linguistics, as well as with a representative of the Down Syndrome Research Foundation, to discuss potential research collaborations.

### **Carolina Méndez Orellana**

Dr. Méndez Orellana (Assistant Professor, Health Science Department, Faculty of Medicine) uses neuroimaging techniques such as Diffusion Tensor Imaging and functional Magnetic Resonance Imaging to examine questions relating to language dominance in patients with brain tumors, brain plasticity in aphasia recovery post-stroke, dementia, language processing in older adults, and brain plasticity in bilingual adults (late L2 acquisition). In addition to presenting on these research interests at the October 3<sup>rd</sup> member event, Dr. Méndez visited a number of LangSci faculty members who are engaged in related work and visited the North Shore Stroke

Recovery Centre to learn more about their program and talk with the RSLP there about post-stroke aphasia interventions.

## **Edmundo Kronmüller**

Dr. Kronmüller's (Assistant Professor, Psychology) research interests include language, dialogue, cognition, and pragmatics, especially perspective-taking and intercultural pragmatics. His recent publications include *The positive side of a negative reference: the delay between linguistic processing and common ground* (2017, Royal Society Open Science, with Noveck, Rivera, Jaume-Guazzini, and Barr) and *Referential precedents in spoken language comprehension: A review and meta-analysis* (2015, Journal of Memory and Language, with D. Barr). Dr. Kronmüller gave a brief presentation on these interests at the October 3<sup>rd</sup> member event and met with faculty members in Psychology and English.

## **Research Theme Initiatives**

### **Language, Sustainability, and Transnationalism (LST)**

#### **Storybooks Canada & Indigenous Storybooks**

In October 2017, LLED featured Storybooks Canada in public seminar. Bonny Norton led a panel of three graduate students in LLED (now LangSci members) with focus on Bengali translation research and community-based research with Learning Buddies Network. One of these presentations can be found here: <https://www.youtube.com/watch?v=3nNf5wzQSU4>.

This research group has further expanded as the Indigenous Storybooks project develops, with the new inclusion of Sara Davidson (LLED), Mark Turin, Strang Burton (Linguistics), Daisy Rosenblum (Anthropology), and Marianne Huijsmans (Linguistics).

Further extensions of this work include a [Memorandum of Understanding](#) with the Canadian NGO [CODE](#) and McGill University, and a SSHRC Connections Grant (submitting May 2018) on Early Childhood Research based on Storybooks Canada work in collaboration with Janet Jamieson (PI), Director of the Institute for Early Childhood Education and Research.

#### **The Power of Absence and Silence**

This workshop, led by Shaylih Muehlmann and supported by a Theme Development Grant from the Peter Wall Institute for Advanced Studies and the 2017 GCRC. Participants included Language Science faculty from Anthropology, Linguistics, Education, Zoology, and Geography.

#### **Negotiating changing Chinese language, literacy and other semiotic practices in the transnational online information economy**

More information on this project can be found [in Appendix: Supported Member Projects](#)

# **The Communicating Mind and Body (CoMBo)**

## **Health Outcomes and Language (HOLa)**

In 2017, this group (led by Lorianne Jenstad, School of Audiology and Speech Science) developed a scoping review strategy to examine how communication between patients and care providers affects patient outcomes. At this stage, the group is seeking to determine what research exists on the topic and where the gaps exist - specifically, what groups and outcomes have been studied, and how. In February 2018, they applied for a CIHR Knowledge Mobilization grant, supported by Language Sciences using 2018 GCRC funds.

## **Myelination and Motor Learning**

This project examines how learning to produce sounds of a new language impact neural connectivity. The research team includes LangSci faculty and students from Psychology, Rehab Medicine, Linguistics, Philosophy, Electrical & Computing Engineering, Physics and Radiology, and Education. In late 2017, this group hired two programmers to develop a targeting game to train participants to accurately produce a series of syllables in a tone language. At the time of reporting, the game was nearly complete and the group is preparing to develop the training targets and begin behavioral piloting. Neural scans are planned for late 2018 – early 2019.

## **Evolving Language in an Information Economy (ELIE)**

### **Control Strategies for Articulatory Speech Synthesis for Natural User Interfaces**

In October 2017, this research group (Sid Fels, Bryan Gick, Anthony Herdman, and Ian Stavness (University of Saskatchewan)) received a \$590,000 NSERC Strategic Partnership Grant alongside industry partner CTF (<http://www.ctfmeg.com>) to build the next-generation model of neural control of speech. This project has the three central goals of 1) improving an existing biomechanics-to-speech model based on finite differencing approach and mapping biomechanics to synthesis parameters, 2) using machine learning techniques to develop neural control topologies to establish low degree of freedom control based on muscle synergies, and 3) building control models for the coupled biomechanical-neural system to map MEG/EEG signals to control articulation through topological maps.

As described in the grant application: “These goals will converge to synthesize a neurally controlled talking head for use in natural user interface evaluations. As a capstone demonstration, the project will explore having a person speak in real-time using the neurally controlled talking head while in the MEG.”

## **Avatar-Mediated Communication**

This group includes Bryan Gick, Sid Fels, and N. Pontus Leander (University of Groningen).

The project is exploring the emotional and social components of avatar-mediated interaction (AMI), to determine the possibilities and limits of avatars for facilitating anonymous communication and distance communication, and to outline basic principles of AMI design. The group will be applying for SSHRC funding for this project in the coming year.

## **Deep Learning of Multilingual Emotion Expression**

This group, led by Muhammad Abdul-Mageed (School of Library, Archival, and Information Sciences) is exploring computational treatment of emotion in natural language. Muhammad is working on developing new methods of deep learning for natural language processing, with a focus on solving the two problems of lack of labeled data and bias in labeled data. In 2017, he received an NSERC Discovery Grant for carrying out this line of research. Muhammad is also working on better understanding the problem of misinformation in social media and has received a SSHRC Insight grant to undertake related work. This will enable him to extend the previous work on emotion detection supported by Language Sciences seed funds.

## **Cross-Theme Projects**

### **Envisioning a Language Science of Literacy**

Janet Werker and co-Investigators Mark Turin, Alona Fyshe (University of Victoria), and H  l  ne Deacon (Dalhousie University), submitted and received a SSHRC Connection Grant for their workshop *Envisioning a Language Science of Literacy*. This workshop May 22-24, 2018 will bring together researchers in the areas of spoken language acquisition, literacy acquisition, First Nations and endangered languages, and computational neuroscience to bridge the gap between these disciplines and develop a new framework for empirical investigation of language and literacy acquisition. In the first two days of the workshop, the Co-Investigators will provide brief overviews of their respective fields, followed by flash talks from several of the attendees and open discussion. On the third day, small groups of attendees will meet to develop concepts and strategies for a SSHRC Partnership Letter of Intent, to be submitted in February 2019. Workshop participants include LangSci faculty members and 9 faculty members from other universities, as well as the International Research Center for Neurointelligence and the Jacobs Foundation.

## **Teaching and Training**

### **Living Language: Science & Society**

In November 2017, the course Living Language: Science & Society received approval from the University Senate and will be cross-listed in six faculties (Arts, Applied Sciences, Forestry, Land & Food Systems, Language & Literacy Education, and Pharmacy) in Winter Term 1, 2018. Students in the Faculty of Science and Sauder are able to register for the course as an Arts elective.

Co-instructors Janet Werker and Mark Turin continue developing the syllabus for this course with the assistance of staff at the Centre for Teaching and Learning Technology. In particular, Jeff Miller, Allyson Rayner, and Manuel Dias are offering support. This partnership is financed by Language Science's funding from the Provost's Office for course development.

In its first iteration, *Living Language* will be capped at 40 students drawn from all faculties at UBC. CTLT and the students themselves will assist in evaluating the course and designing its next iteration. Upon completion of this course, students will be able to:

- **identify** the core properties of language, and **demonstrate** how these shape human thought and interaction
- critically **assess** the use of language in your existing area of specialization
- **become** self-aware of what you've learned, and be in a position to **apply** this deepened understanding in critical, creative and flexible ways
- **use** methods and tools from language sciences to **communicate** disciplinary insights to broader audiences
- **listen** beyond your discipline and **open** yourself to other ways of knowing
- **locate** the power of language in science and society and **recognize** when language is harnessed to manipulate rather than inform

## Visiting Students and Trainees

Three doctoral students from the Pontifical Catholic University of Santiago, Hong Kong University, and the University of Auckland visited UBC with support from Universitas 21 and the Global Research Alliance in Language.

## Community Outreach

### Advisory Board for Community Engagement

In the fall of 2017, the Language Sciences Steering Committee and Marietta Hurst began discussing the formation of a panel of community members who can advise the Language Sciences Initiative on socially impactful ways of connecting with the non-academic in Vancouver and British Columbia. Mrs. Hurst agreed to chair such an Advisory Board in December of 2017. Members of the Steering Committee have been developing the central mandate for the board with input from the Arts Development team, and will be reaching out to their own connections outside of UBC to further discuss the board mandate, points of common interest, and potential board members. Language Sciences hopes to hold a public launch of the Language Sciences Initiative in September 2018 for interested community leaders to further develop connections with communities in Vancouver and identify potential board members for 2019.

## Partner Organizations

The Language Sciences Initiative is in the process of developing partnerships with a number of organizations beyond UBC:

- Down Syndrome Research Foundation – in discussion for development of project on clinical interventions and therapies to assist speech production
- Learning Buddies Network - a non-profit that pairs elementary school students with high school or university student reading tutors (buddies) – to partner on child language & literacy development knowledge mobilization
- International Research Center on Neurointelligence (IRCN) at University of Tokyo/Harvard – for cross-linguistic, neural and computational studies of language
- Memorandum of Understanding between Heiltsuk Cultural Education Centre, Bella Bella Community School and UBC's First Nations and Endangered Languages Program
- The Tactile Mind - a collaborative initiative led by the DeafSpace Institute, the Deaf Studies Department, the Linguistics Department of Gallaudet University
- Jacobs Foundation – sending a member of their research support team, Dr. Jessica Bühler, to the May 2018 workshop *Envisioning a Language Science of Literacy*.

## Knowledge Mobilization

### Language Science Talks

The Language Science Talks began again in April 2018, with two talks from Anuschka van 't Hooft (Professor, Autonomous University of San Luis Potosí, Mexico - *Collaborative Language Documentation in Mexico - Working with Speakers Online*) and Nobuaki Minematsu (Professor, Graduate School of Engineering, University of Tokyo - *Speech Structure and Its Derivatives - What is the skeleton of spoken language?*) Future talks are planned for Fall 2018, with support from the 2018 Grant for Catalyzing Research Clusters. The Language Sciences Initiative also co-sponsored a talk from Dr. Carl Haber, Senior Scientist at Lawrence Berkeley Laboratory, on his work digitizing fragile, damaged, or obsolete recording material using images. Other sponsors included First Nations & Endangered Languages program, the Audrey & Harry Hawthorne Library & Archives (MOA), the iSchool, the School of Audiology & Speech Sciences, the Department of Linguistics, First Nations & Indigenous Studies, and the Musqueam Indian Band MIB – UBC FNEL Language Program.

### Podcast

Jennifer Abel and Barbara May Bernhardt continued to develop the Language Sciences Podcast, *Language Is...*, with contributions from Ella Fund-Reznicek (Language Sciences Coordinator), Elise McClay (Graduate Academic Assistant), and Language Sciences Initiative members Murray Schellenberg and Ryan Taylor. Initially, Drs. Abel and Bernhardt prepared the pilot episode as a demo for CiTR, but – with recent personnel changes at CiTR and the postponement of its funding drive – are now reviewing alternative platforms for release. The demo episode



includes excerpts from interviews with several Language Sciences Initiative members as they discuss their research and their responses to the question, “How would you complete the sentence ‘*Language is ...*’?” The 2018 GCRC award supports further developing the podcast; the Steering Committee will work with Drs. Abel and Bernhardt to plan next steps in podcast format, content, and use.

## Website Re-design

The Language Sciences Initiative Website (<http://languagesciences.ubc.ca>) was redesigned and relaunched in August 2018 with support from the Vice President Research & Innovation Communications team, with additional features “[Find a Collaborator](#)” and “[Submit Your Content](#)” rolled out in early 2018.

## Synergetic Initiatives

### Master of Data Science in Computational Linguistics

A new Master of Data Science in Computational Linguistics was approved by the University Senate in February 2018. This interdisciplinary, industry-facing master’s program, which grew out of discussions between LangSci members in the Faculty of Arts and Faculty of Science, will result in several new, cross-disciplinary faculty, and the training of forty-five students a year. As part of the master, the students will be working with the tech industry, resulting in greater links between BC’s burgeoning technology sector and Language Sciences as a whole.

The internet is built out of language and computation, and computational linguistics sits at this interface. Social media, Google searches, and predictive texting are all examples of language and computation working together, and examples of what makes computational linguistics a growth area within a growth area. The employment outlook for software designers is strong in BC and globally, and the field is projected to continue to grow for at least the next 10 years (US projections are for a 17% increase, to over 1 million jobs, during this period); and as the overall field continues to grow, multiple sources indicate that specialization in computational linguistics will continue to be a leading growth area within the field.

Three new faculty members in the iSchool and Linguistics, hired between 2016 and 2019, will teach in this area. LangSci will both contribute to and benefit from this program by connecting computational linguistics faculty and students with a community of researchers working on diverse languages, including indigenous North American languages, and on diverse human conditions. Furthermore, collaboration with the new faculty hires and students will provide Language Science researchers even more access to techniques such as machine learning, big data and computational automatization.

# Language Sciences Undergraduate Research Conference

Language Sciences sponsored the second annual student-organized Language Sciences Undergraduate Research Conference (LSURC) on January 19<sup>th</sup>-20<sup>th</sup>, 2018, with ten oral presentations and nine posters by student presenters in Linguistics, Psychology, Cognitive Sciences, and the iSchool from UBC (Point Grey and Okanagan) and Langara College. A number of Language Sciences faculty and graduate student members from UBC and SFU assisted in reviewing abstracts and acting as adjudicators. The full LSURC program is available at [http://blogs.ubc.ca/lSURC/files/2018/01/LSURC2018\\_ProgramAbstractBooklet.pdf](http://blogs.ubc.ca/lSURC/files/2018/01/LSURC2018_ProgramAbstractBooklet.pdf). Two oral presentations and one poster presentation were recognized as outstanding.

Plenary speakers this year were Dr. Molly Babel (Dept. of Linguistics), Dr. Muhammad Abdul-Mageed (School of Library, Archival and Information Studies), and Dr. Neda Todorovic (Dept. of Linguistics) who spoke on the theme *Language as an insight into human nature*:

The studies of language span diverse fields but are united by the common theme that human language provides unique insight into how we come to understand human nature. Language is cognitive and cultural, internal and external, personal and social; the diversity of approaches taken in studying language enriches our understanding of who we are. How can the perspective of your field enrich our understanding of language, as a uniquely human phenomenon?

The plenary speakers also participated in a round-table discussion chaired by Language Sciences Coordinator Ella Fund-Reznicek.

## eNunciate

[eNunciate](#) is a visual pronunciation tool that uses ultrasound technology to help students visualize what is happening with their lips, teeth, and tongue as they learn to speak a second language. This project was built on the Visible Speech Project (Kathleen Hall, 2013) and a Teaching and Learning Enhancement Fund (March 2014-March 2015). The team that initially developed the eNunciate tool and resources includes faculty and graduate students from the Departments of Linguistics and Asian Studies, instructors of Japanese and other languages at UBC, and instructional designers – many of whom are LangSci members. The eNunciate website hosts learning tools for students in phonetics courses, self-directed courses in Japanese and Cantonese, and resources for developing custom ultrasound video for language learning resources. A number of publications have resulted from this teaching/research collaboration in 2017, including four journal articles and two conference proceedings.



# **Appendix: Supported Member Projects**

## **Storybooks Canada (previously The African Storybook in Multilingual Canadian Classrooms)**

*Prepared by Bonny Norton and Ella Fund-Reznicek*

PI:	Bonny Norton	Professor	Language & Literacy Education (LLED)
Co- Investigator(s)	Espen Stranger-Johannessen	PhD Student	LLED
	Liam Doherty	PhD Student	LLED
	Ron Darwin	PhD Student	LLED
	Margaret Early	Professor	LLED
	Margot Filipenko	Professor	LLED

Seed funds supported the development of a framework for the Storybooks Canada Website and a lit review for the publication [Digital Storytelling and Reconciliation](#) (Hare, J., Darwin, R., Doherty, L., Early, M., Filipenko, M., Norton, B., Soni, D., and Stranger-Johannessen, E. In P. Tortell, P., M. Young & P. Nemetz (Eds.) *Reflections of Canada: Illuminating our opportunities and challenges at 150+ years*. pg 200-205. Vancouver, BC: UBC Peter Wall Institute for Advanced Studies).

A more detailed description of this project can be found [here](#) and [here](#).

## **How linguistic communication shapes the perception of a plant-based diet**

*Prepared by Jiaying Zhao*

PI	Jiaying Zhao (Canada Research Chair)	Assistant Professor	Psychology/IRES
Co-Investigator(s)	Sebastian Leon	Student	Psychology

In this study, the investigators conducted a survey with 1200 participants using Amazon Mechanical Turk. Participants were randomly assigned to read different types of messages (ethical, environmental, social, and health) portraying the benefits and costs of plant-based diets. The investigators subsequently measured participants' perception of and willingness to consume animal products and plant products. The results showed that while the messages didn't significantly change participants' views on plant products, the ethical message decreased perceived pleasantness and deliciousness of animal products and participants' willingness to consume animal products, compared to environmental, social, or health messages. The preliminary findings of the pilot study have inspired three new follow-up studies on plant-based diets in this lab. The funding from Language Sciences covered participant payments and parts of Sebastian Leon's salary.

A full description of this project can be found [here](#).

# **Negotiating changing Chinese language, literacy and other semiotic practices in the transnational online information economy**

*Prepared by Liam Doherty*

PI	Patricia Duff	Professor	Language & Literacy Education (LLED)
Co-Investigator(s)	Duanduan Li	Associate Professor	Asian Studies
	Liam Doherty	PhD Candidate	LLED

Despite the status of Chinese as an important language of international trade, commerce, and communication, research on learners acquiring Chinese as a second or additional language remains lacking. Supported by a LangSci grant, this study aimed to bridge a part of that gap by examining the ways in which learners negotiate a rapidly changing landscape of Chinese language and literacy practices impacted by the global information economy and by increasingly mobile communication technologies. During the study, five advanced level adult learners shared their perspectives on transnational and digital language practices over the course of three months through interviews, surveys, focus groups, as well as purpose-built online blog, wiki, and forum software. Three major themes emerged from this data, surrounding the core notion of “navigation” within a shifting language environment: navigating information and textual “density”; navigating access to the “world of apps”; and navigating an authentic “Sinophone identity” in interactions with other speakers. The LangSci grant enabled development of the online tools and infrastructure undergirding the project, allowing transnational digital themes to be explored from within the digital realm itself. The experience of piloting these online collaborative research tools in turn helped shape the development and theorization of a major follow-up study that examined many of these themes in greater depth.

## **There and Back in Two Languages: Intersections of Bilingualism, Identity and Place for Luso-Canadian Transnationals**

*Prepared by Sara Vieira*

PI	Christine Schreyer	Associate Professor (UBC-O)	Community, Culture, & Global Studies
Co-Investigator(s)	Sara Vieira	PhD candidate (UBC-O)	Community, Culture, & Global Studies

Sara Vieira is a doctoral candidate currently researching the experiences of Luso-Canadian transnationals in both the Greater Toronto Area and in Central Portugal. Additionally, she is conducting fieldwork within the GTA to better understand the role of Portuguese associations, centres, and key members in the community who organize and promote Portuguese cultural events, language classes (both Portuguese and English), and various other community led initiatives. Her research aims to understand the relationship between bilingualism, identity, and place for Luso-Canadians. The Languages Sciences fund has been an integral component of Sara’s research as the funds have facilitated travel to and from Portugal and within the GTA. Further, many of the events within the community are fundraisers which require payment to

attend, and the support of the Language Sciences initiative has facilitated her fieldwork in this manner.

A full description of this project can be found [here](#).

## **Kaska Language Immersion Parent Group**

*Prepared by Martina Volfova*

PI	Patrick Moore	Associate Professor	Anthropology
Co-Investigator(s)	Martina Volfova	PhD Candidate	Anthropology

In this small project I experimented with creating a Kaska language immersion environment for families with small children. I organized a series of Saturday morning playgroup sessions and invited families to come and spend time with a Kaska speaker. These playgroups lasted approximately two hours and were mostly unstructured. I provided various art supplies, toys, picture books, and snacks to facilitate productive interactions between the children, parents, and the elder. Children learned to identify animals, colors, foods, and objects, and began responding to simple commands and requests. Each time I made notes of the language content that arose from these sessions, and later, provided the parents with audio recordings of this language content to help reinforce it at home. At the end of this small project, each family received a copy of the children's classic book *Brown Bear Brown Bear What Do You See?* by Bill Martin Jr. and Eric Carle translated into Kaska, accompanied by a CD of a recording I've made with the participating elder. Since this was one of the books we used during our playgroup, it functioned as a fun reinforcement. I've later created a small video version of this book and made it available to others in the community. The following is a link to this video: <https://vimeo.com/230883164> The funding I received from UBC Language Sciences Initiative enabled me to provide a small honorarium for the elder, rent a space to hold these playgroups, and also to cover some of the expenses associated with providing supplies and food for the playgroup sessions.

## **You Get What You Ask For: Understanding the Importance of Interview Language Choice in Multilingual Communities**

*Prepared by Daria Boltokova*

PI	Shaylih Muehlmann	Associate Professor (Canada Research Chair)	Anthropology
Co-Investigator(s)	Daria Boltokova	PhD Candidate, Graduate Fellow (Harvard University)	Anthropology, Davis Center for Russian & Eurasian Studies

As part of our project "You Get What You Asked For: Understanding the Importance of Interview Language Choice in Multilingual Communities," we transcribed fifty semi-structured interviews collected by one of the collaborators, Daria Boltokova. Boltokova spent a year in Yakutsk, in the northeastern Russia, studying language-change among indigenous Sakha youth. Most of her interviewees were bilingual in Sakha and Russian. We focused on how interviewees chose a language for the interview. We also looked into whether participants carried on speaking

in the language of their choice throughout the duration of the interview. Our project also sought to undertake an exhaustive literature review of existing methodological approaches to documenting bilingualism, code-switching and code-mixing. Beginning from Blom and Gumperz's (1972) seminal work on code-switching, our goal was to survey major studies of multilingual communities in order to understand how researchers have dealt with dilemmas of interview language choice (or not) in the past. On the basis of this survey and interview transcripts we conclude that researchers need to be more transparent about their linguistic fluencies in targeted languages and how interviewees cue off their identities in choosing one language over another in the interviews. Work still needs to be done in bridging disciplines like linguistics, linguistic anthropology and sociolinguistics.

## **Kizuna: Trust In Between Spaces of Past and Future**

*Prepared by Yoriko Gillard*

PI	Carl Leggo	Professor	Language & Literacy Education (LLED)
Co-Investigator(s)	Yoriko Gillard	PhD Student	LLED

With the generous support we have received from Language Science Fund, UBC Language Sciences, the Department of Language and Literacy Education UBC, and Capilano University we could organize the following events: KIZUNA: Trust In Between Spaces of Past and Future (March 6<sup>th</sup>), KIZUNA: Belong to Heal (March 11<sup>th</sup>), KIZUNA: Creative Practices as Healing Aids for Human Suffering (March 28<sup>th</sup>), and KIZUNA: Liminal Story Telling (July 19<sup>th</sup>). The purpose of these gatherings was to contemplate, to unfold, to belong, to cling, to love, and to hope for humanity. These were educational events that invited various people from different communities, cultures, and disciplines. Yoriko Gillard is a PhD student in the Department of Language and Literacy Education, an artist, poet, researcher, and teacher. Her goal is to create a trustful and heartfelt bond (Kizuna) between humanity through creative social acts. As her PhD supervisor, Dr. Carl Leggo, a UBC professor and poet supported and supervised the events' organizing processes and organized poetry workshops at two of the four events. Each event was successful for its uniqueness and interdisciplinary nature and it engaged people inside and outside academy with an eye to the future; Kizuna (heartful human to human and nature connection).

# Sound Change and Perceptual Adaptation in English-Cantonese Bilinguals

*Prepared by Molly Babel*

PI	Molly Babel	Associate Professor	Linguistics
Co-Investigator(s)	Lauretta Cheng	Student	Linguistics
	Leighanne Chan	Student	Linguistics
	Yao Yao	Hong Kong Polytechnic University	

The award from the Language Sciences Initiative for *Sound Change and Perceptual Adaptation in English-Cantonese Bilinguals* provided financial resources to compensate participants for their participation in two studies, both of which were part of undergraduate honours thesis completed in April 2017. Ms. Leighanne Chan wrote a thesis titled “Language Dominance in Cantonese-English Bilinguals and Its Effects on Perceptual Learning”. In this thesis Chan reports on what is the first lexically-guided perceptual learning study on Cantonese listeners. She demonstrates that regardless of current levels of language dominance, Cantonese-English early bilinguals show rapid adaptation to novel fricative pronunciations. Chan and I are currently preparing a manuscript based on her thesis work for submission to The Journal of the Acoustical Society of America. This award also supported Ms. Lauretta Cheng’s undergraduate honours thesis work, “Mergers-in-Progress in Hong Kong and Vancouver Cantonese-English Bilinguals”, which is available in the UBC Circle Repository (Cheng, 2017, DOI 10.14288/1.0347537). In her thesis Lauretta describes a perception study on the series of word-initial mergers in Cantonese with younger and older listeners from Vancouver and Hong Kong. Lauretta found that younger listeners in both locations were more advanced in the sound changes than the older listeners. Lauretta collected a speech corpus as part of her work, and we are currently analyzing these data. Subsets of this work have been presented at conferences (Cheng et al., 2017), and we are preparing a larger manuscript for submission.

A full description of this project can be found [here](#).

## Workplace language challenges and triumphs for newcomers from diverse linguistic backgrounds in the Okanagan

*Prepared by Scott Roy Douglas*

PI	Scott Roy Douglas	Assistant Professor (UBC-O)	Education
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Funding from UBC’s Language Sciences initiative supported an investigation into language challenges in the workplace in the Okanagan region for six newcomers from language backgrounds other than English and their interlocutors. Data collection consisted of two semi-structured interviews as well as a standardized English language proficiency test. Salient anecdotes from the interviews were coded, with codes undergoing thematic analysis. For the participants, when interlocutors heightened emotional tension, used language in certain ways, professed misunderstanding, placed time pressures, and engendered negative perceptions, communication was typically adversely affected. It seemed how participants’ measured levels of English language proficiency manifested in the workplace often depended on the people with whom they were interacting. These findings point to the importance of understanding the impact

interlocutors have on communicative competence. Funding from UBC’s Language Sciences initiative supported the hiring of a graduate student to assist with participant recruitment and data collection. Funds further supported the dissemination of the initial findings at the Canadian Association of Applied Linguistics annual conference in May 2017. Subsequent to the conference presentation, the findings of the study have been written up into a full research article that has been submitted to a peer-reviewed journal. The paper is currently in review.

A full description of this project can be found [here](#).

## **Indie Pop Voice (previously Canadian Raising in Singing)**

*Prepared by Ella Fund-Reznicek, Bryan Gick, Murray Schellenberg, and Colin Jones*

PI	Bryan Gick	Professor	Linguistics
Co-Investigator(s)	Murray Schellenberg	Postdoctoral Fellow	Linguistics
	Avery Ozburn	PhD Student	Linguistics
	J. Patrick Raftery	Assistant Professor	Music
	Colin Jones	Undergraduate Research Assistant	Linguistics

This research group examined a new type of singing, commonly referred to as “indie-pop voice” (e.g. Ugwu, 2015). In particular, analysis focused on a distinctive articulatory setting recently adopted by “indie-pop” singers, which may be responsible for the observed effects on sung pronunciation. The group took spectral measurements of vowels from 8 different “indie-pop” singers’ successful songs and spoken interviews.

Seed funds from LangSci paid for a salary for an undergraduate research assistant, who performed the spectral analysis on the sung and spoken recordings. Funds also covered poster printing for this Research Assistant’s poster at the 2016 Language Science Undergraduate Research Conference. Results were also published in *Canadian Acoustics (Indie-Pop Voice: How a Pharyngeal/Retracted Articulatory Setting May Be Driving a New Singing Style, 2017, C. Jones, M. Schellenberg, B. Gick)* and presented by Bryan Gick at the Canadian Acoustical Association. Per their CAA meeting abstract: “Results revealed a high F1 across the “indie-pop” vowel space (particularly the front vowels) which is a strong correlate of pharyngealization. We also observed a lower F2 in most vowels (particularly high-back vowels), a correlate of retracted tongue-root (Aralova 2011). Low-back vowels were exceptions to this, possibly because an RTR setting could be redundant with the low tongue position inherent to these vowels. Global tongue retraction may also explain the unusual diphthongs: the greater distance between the tongue’s vocalic position and a coronal target could produce an audible transition.”



## Haptic feedback increases speech intelligibility

Prepared by David Marino

PI	Karon MacLean	Professor	Computer Science
Co-Investigator(s)	David Marino	Undergraduate Research Assistant	Computer Science
	Eric Vatikiotis- Bateson	Professor	Linguistics/Cognitive Systems

Support from the Language Sciences has been invaluable for the development and execution of *Haptic Feedback Enhances Speech Intelligibility*. In particular, their assistance covered development and materials cost in designing a haptic system that simulates the laryngeal vibrations felt in speech with arbitrary input. The system includes a vibrator which can be either worn around the neck or the fingers, which dynamically vibrates to the amplitude of voiced speech (and does not vibrate when speech is unvoiced). Language Sciences funding is also fully covering the cost of running participants—a task that would not have been possible without their support. We are currently in the middle of running participants and actively collecting data that will examine the effects of: 1. The particular style of vibration on intelligibility scores 2. Which phonetic features are best benefited by vibrotactile enhancement 3. The contribution of vibrator placement to intelligibility scores.

A full project description can be found [here](#).

## Neurocognitive development in French immersion students

Prepared by Rachel Weber

PI	Rachel Weber	Assistant Professor	Educational & Counselling Psychology, & Special Education
Co-Investigator(s)	Stefka Marinova- Todd	Associate Professor	Audiology & Speech Sciences

The funding provided for this project (*Neurocognitive development in French immersion students*) was used to support the development of an NSERC Discovery grant. This grant proposed a longitudinal project examining the cognitive, linguistic, and academic development of students in French immersion programs and the relationship of this development with imaging data. With the funding provided, a graduate student supported the co-investigators in preparing a review of the literature related to the brain and cognitive development of sequential and simultaneous bilingual children. While this grant proposal was unsuccessful in securing grant funding for the project, the co-investigators will likely attempt to fund the project through other avenues in the future. In addition, the literature review provided by the graduate student will be used to prepare a systematic review of bilingualism in special populations, with a particular focus on the cognitive correlates of bilingualism and its implications for populations that struggle with literacy and language development.

# The effects of intermittent theta burst stimulation on progressive non-fluent aphasia: A pilot study

*Prepared by Tami Howe*

PI	Tami Howe	Assistant Professor	Audiology & Speech Sciences
Co-Investigator(s)	Jeff Small	Associate Professor	Audiology & Speech Sciences
	Maya Lichtenstein	Behavioral Neurology Fellow	Centre for Brain Health
	Rodrigo Santibanez	Behavioral Neurology Fellow	Centre for Brain Health
	Fidel Vila-Rodriguez	Assistant Professor	Psychiatry
	Howard Feldman	Professor	Neurology

This pilot study will assess the feasibility and potential efficacy of an emerging state of the art treatment approach (intermittent theta-burst transcranial magnetic stimulation) for persons with the nonfluent/agrammatic variant of primary progressive aphasia (nfvPPA) in conjunction with both behavioural and brain outcome measures. At the time of this reporting, the final amendments for the ethics application have been approved and the lead investigator on the overall project, Dr. Fidel Vila-Rodriguez, Director of the Non-Invasive Neurostimulation Therapies Laboratory at UBC Hospital, will soon begin recruiting participants for the study. Funds from LangSci will be used to complete the pre-post treatment language assessments with the participants with nfvPPA who will be receiving transcranial magnetic stimulation treatment.

A full description of this project can be found [here](#).