

Robert J. Reynolds

updated Jan 2022

Assistant Research Professor (Jan 2017 – present)
Brigham Young University
1163A JFSB
Office of Digital Humanities
Provo, UT 84602
(+1) 801.422.7426 (office)
(+1) 801.830.6391 (mobile)
robert_reynolds@byu.edu

Associate Professor II (Aug 2020 – Aug 2022)
UiT – The Arctic University of Norway

Education:

PhD, Russian Computational Linguistics, Universitetet i Tromsø, Aug 2016
MA, Russian Linguistics, Ohio State University, 2011
BS, Psychology and Russian majors, Philosophy minor, Brigham Young University, 2008

Dissertation:

Reynolds, Robert J. "Russian natural language processing for computer-assisted language learning: capturing the benefits of deep morphological analysis in real-life applications"
PhD Diss., UiT–The Arctic University of Norway, 2016.
<https://hdl.handle.net/10037/9685>
Advisors: Prof. Laura Janda and Dr. Prof. Detmar Meurers

Research:

Peer-reviewed journal articles:

Janda, Laura and Robert Reynolds. "Construal vs. Redundancy: Russian aspect in context." 33pp. *Cognitive Linguistics* 30 (3). 2019.

Endresen, Anna, Laura Janda, and Robert Reynolds. "Aspectual opposition and rivalry in Russian are not discrete: new evidence from experimental data." pp. 249-271, *Russian Linguistics* 43 (3). 2019.

Endresen, Anna, Laura Janda, Robert Reynolds, and Francis Tyers. "Who needs particles? A challenge to the classification of particles as a part of speech in Russian." *Russian Linguistics* 40 (2). 2016.

Peer-reviewed collection articles:

Parker, Jeff, Robert Reynolds, and Andrea D. Sims. "Network structure and inflection class predictability: Modeling the emergence of marginal detraction". Committed to volume on morphological typology and linguistic cognition, to be submitted to Cambridge University Press, eds. Andrea D Sims, Adam Ussishkin, Jeff Parker and Samantha Wray.

Peer-reviewed proceedings articles:

Parker, Jeff, Robert Reynolds, and Andrea D. Sims. "A Bayesian Investigation of Factors Shaping the Network Structure of Inflection Class Systems." *Proceedings of the Society for Computation in Linguistics* 1, no. 1 (2018): 223-224.

Reynolds, Robert. "Insights from Russian second language readability classification: complexity-dependent training requirements, and feature evaluation of multiple categories." In *Proceedings of the 11th Workshop on Innovative Use of NLP for Building Educational Applications*, pp. 289–300. 2016. San Diego, California.

- Reynolds, Robert and Francis Tyers. "Automatic word stress annotation of Russian unrestricted text." In *Nordic Conference of Computational Linguistics NODALIDA 2015*, p. 173. 2015.
- Tyers, Francis and Robert Reynolds. 2015. "A preliminary constraint grammar for Russian." In *Proceedings of the Workshop on "Constraint Grammar – methods, tools, applications" at NODALIDA 2015*. Vilnius, Lithuania.
- Reynolds, Robert, Eduard Schaf and Detmar Meurers. 2014. "A VIEW of Russian: Visual Input Enhancement for a Morphologically Rich Language." In *Proceedings of 3rd workshop on NLP for computer-assisted language learning*. Uppsala, Sweden.
- Reynolds, Robert. 2014. "Automatic Evaluation of Potential Targets for Textual Enhancement: Identifying Optimal Sentences for Learner Uptake." In *Research Challenges in CALL. Proceedings of the Sixteenth International CALL Conference*, edited by Jozef Colpaert, Ann Aerts, and Margret Oberhofer, 365. Antwerp: University of Antwerp.
- Reynolds, Robert. 2013. "Are Russian prefixes out of order?: Complexity-Based Ordering and template morphology." *University of Pennsylvania Working Papers in Linguistics* 19 (1). ISSN 1524-9549.s 158 - 168.

Invited talks and workshops:

- Reynolds, Robert. 2019. "Russian NLP for language learners: technologies and applications." Plenary address at *Corpus Linguistics*. June 24-28, 2019. St. Petersburg, Russia.
- Reynolds, Robert. 2019. "Russian is CALLing. A guided tour of modern Computer-Assisted Language Learning tools". Invited workshop at the *American Association of Teachers of Slavic and East European Languages National Meeting*. Feb 7-10, 2019. New Orleans, LA.

Presentations:

- Reynolds, Robert, Konnor Petersen, 2021. "A VIEW of Russian Phonetics: Automatically Generated Phonetic Transcription Exercises in Authentic Text." Presentation at *CALICO 2021 Virtual Conference: Global realities*. June 3. (online event)
- Reynolds, Robert, Benjamin Branchflower. 2020. "A machine-learning approach to classifying reading levels of Russian documents." Presentation at *2020 ASEES Convention*. November 7. (online event)
- Reynolds, Robert. 2020. "UDAR: A Russian morphological analyzer for language learning." Presentation at *Linguistics Discussion Group*. Feb 4, Provo, UT.
- Reynolds, Robert and Grant Eckstein. 2020. "Measuring reading proficiency using machine-learning models generated from eye-tracking data." Presentation at *Interagency Language Roundtable*. Jan 24. Washington, DC.
- Reynolds, Robert, Steven Luke, and Jennifer Bown. 2019. "Automatic Russian L2 reading proficiency assessment using machine learning." Presentation at *Linguistics Discussion Group*. Oct 22, Provo, UT.
- Reynolds, Robert, Steven Luke, and Jennifer Bown. 2019. "Automatic Russian L2 reading proficiency assessment using machine learning." Presentation at *Second Language Research Forum*. Sept 20, East Lansing, MI.
- Janda, Laura and Robert Reynolds. 2018. "The constructional semantics of aspect in Russian". Presentation at *Constructional semantics: Cognitive, functional and typological approaches*. August, Helsinki.
- Janda, Laura and Robert Reynolds. 2018. "The Relationship of Context to Aspect in Russian: An Experiment". Invited lecture at the *Slavischen Seminar der Universität Tübingen*. July, Tübingen.

- Janda, Laura and Robert Reynolds. 2018. "Representing events in Russian: How much is compulsory and how much is open to construal?". Invited lecture at Princeton University. March, Princeton, NJ. 3
- Moore, Travis, Robert Reynolds. 2018. "Connecting second language developmental stages to automated essay scoring." Presentation at *CALICO 2018*. May 31, 2018, University of Illinois, Urbana-Champaign.
- Parker, Jeff, Robert Reynolds and Andrea D. Sims. 2018. "The role of language-specific network properties in shaping inflectional irregularity." Paper presented at the Emergence of Universals Workshop in Columbus, OH, February 18-19, 2018.
- Janda, Laura and Robert Reynolds. 2018. "Russian aspect in context". Presentation at the *2018 Conference of The American Association of Teachers of Slavic and East European Languages*. Feb 1-4, Washington, DC.
- Janda, Laura, Robert Reynolds and Francis Tyers. 2018. "TWIRLL Workshop: Targeting Word forms In Research-based Russian Language Learning". Presentation at the *2018 Conference of The American Association of Teachers of Slavic and East European Languages*. Feb 1-4, Washington, DC.
- Parker, Jeff, Robert Reynolds and Andrea D. Sims. 2017. "Network properties of inflection class systems: why some classes contribute more complexity than others". Presentation at the *Morphological Typology and Linguistic Cognition Workshop* at the Linguistic Institute, University of Kentucky, July 22-23, 2017.
- Reynolds, Robert. 2016. "Russian computer-assisted language learning and artificial intelligence: automatic morphological analysis and disambiguation." presented at *The 11th Slavic Linguistics Society Annual Meeting*. Sept 23-25, Toronto, Canada.
- Reynolds, Robert. 2016. "Computer Assisted Language Learning and Artificial Intelligence: A Case Study With Russian Morphology" presented at *Language Acquisition Research Colloquium*. Sept 21, Provo, UT.
- Janda, Laura, Hanne Eckhoff, Olga Lyashevskaya, Robert Reynolds. 2016. "How learnable is Russian aspect?" presented at *Time and Language, organized by the Linguistic Association of Finland*. August 25-26, Turku, Finland.
- Reynolds, Robert. 2016. "Insights from Russian second language readability classification: complexity-dependent training requirements, and feature evaluation of multiple categories." presented at *The 11th Workshop on Innovative Use of NLP for Building Educational Applications*. June 16, San Diego, California.
- Tyers, Francis, Anna Endresen, Robert Reynolds and Laura Janda. 2015. "Do "particles" deserve to be classified as a part of speech? A view from Russian." presented at *The 5th Conference of the Scandinavian Association for Language and Cognition*. Trondheim, Norway.
- Reynolds, Robert and Francis Tyers. 2015. "Automatic word stress annotation of Russian unrestricted text." presented at the *Nordic Conference of Computational Linguistics NODALIDA 2015*. Vilnius, Lithuania.
- Tyers, Francis and Robert Reynolds. 2015. "A preliminary constraint grammar for Russian." presented at the *Workshop on "Constraint Grammar – methods, tools, applications" at NODALIDA 2015*. Vilnius, Lithuania.
- Reynolds, Robert, Eduard Schaf and Detmar Meurers. 2014. "A VIEW of Russian: Visual Input Enhancement for a Morphologically Rich Language." presented at the *3rd workshop on NLP for computer-assisted language learning*. Uppsala, Sweden, November 13.
- Reynolds, Robert. 2014. "Automatic evaluation of potential targets for textual enhancement: identifying optimal sentences for learner uptake." presented at *Antwerp CALL 2014, the XVIth International CALL Research Conference*, July 7-9, Antwerp, Belgium.

- Reynolds, Robert. 2014. "Automatisk vurdering og rangering av setninger i tekstberikelse." presented at *NORKOG: Kognitivt sommerseminar* June 20-21, Tromsø, Norway.
- Reynolds, Robert. 2013. "Intelligent computer-assisted language learning applications for Russian." *Novemberseminaret*, Nov 22, Tromsø, Norway.
- Reynolds, Robert. 2013. "Russian prefix ordering." *Giellatekno Seminar*, Sept 22, Tromsø, Norway.
- Phelan, Michael, Jeffrey Parker, Robert Reynolds, Lauren Ressue. 2012. "Breaking command-ments and friend-ships: effects of relative frequency and affix parsability in lexical processing." presented at the *American International Morphology Meeting*, Sept 22, Amherst, MA.
- Reynolds, Robert. 2012. "Are Russian prefixes out of order?: Complexity-Based Ordering and template morphology." presented at *Penn Linguistics Colloquium 36*, March 23-25, Philadelphia, PA.
- Ressue, Lauren, Robert Reynolds, Jeffrey Parker, and Michael Phelan. 2010. "The complexity of processing simple words: The morphological processing of infrequent base words." presented at *The 5th Annual Slavic Linguistic Society Conference*, October 29, Chicago, IL.
- Reynolds, Robert. 2010. "Diachronic trends in verb token frequencies in Old Novgorodian: Insights into the development of aspect." presented at *Midwest Slavic Conference*, April 17, Columbus, OH.

Posters:

- Parker, Jeff, Robert Reynolds and Andrea D. Sims. 2018. "A Bayesian investigation of factors shaping the network structure of inflection class systems". Poster at the *1st Meeting of the Society for Computation in Linguistics*, Salt Lake City, January 4-7, 2018.
- Reynolds, Robert, and Detmar Meurers. 2014. "A VIEW of Russian: Visual Input Enhancement for a Morphologically Rich Language." presented at *The 3rd workshop on NLP for computer-assisted language learning*, Uppsala, Sweden, November 13.
- Phelan, Michael, Jeffrey Parker, Robert Reynolds, Lauren Ressue. 2012. "Breaking command-ments and friend-ships: effects of relative frequency and affix parsability in lexical processing." presented at *The Buckeye Language Network Symposium*, Nov 30, Columbus, OH.
- Reynolds, Robert. 2006. "The effects of irritating stimuli on mood-congruent memory." Poster presented at *The Mary Lou Fulton Mentored Research Conference*, Provo, UT.

Computer Applications:

- pip_inside, open-source: python package installation utility for learners
https://github.com/reynoldsnlp/pip_inside
- Two-level finite-state morphology of Russian
<https://github.com/giellalt/lang-rus> (source code)
<http://giellatekno.uit.no/cgi/d-rus.eng.html> (online interface for raw analyses)
<https://github.com/reynoldsnlp/udar> (python object-oriented wrapper)
- Constraint grammar of Russian
<https://github.com/apertium/apertium-rus/blob/master/apertium-rus.rus.rlx>
- Russian VIEW browser extension (automatic grammar exercise generation on any webpage)
<https://chrome.google.com/webstore/detail/view/hdheflmgjpockmkcadghgapjfidobkoi>
<https://view.byu.edu> (backend API and docs)

Russian L2 readability models: machine learning approaches to readability classification are more robust than traditional readability formulas. I am experimenting with a variety of features, comparing models' learning curves at different levels of complexity, and testing the generalizability/portability of resulting classifier models.

Russian inflection class inducer: an algorithm to induce a Zaliznjak-style morphological description from a set of attested wordforms. Facilitates the automatic expansion of my morphological analyzer's lexicon based on curated resources, such as wiktionary and opencorpora.

Two-level Russian graph2phone: a two-level finite-state transducer for converting accented words into phonetic representations (either Russian Linguistic Alphabet or IPA)

Russian Grammar Reference Cards, 10 cards covering morphology, phonology, syntax, case governance of prepositions, inflectional irregularities and special topics.

https://reynoldsnlp.com/ReynoldsGrammarCards_15Jul2013BW.pdf (black & white)

https://reynoldsnlp.com/ReynoldsGrammarCards_15Jul2013.pdf (color)

“With a VIEW to learn”: assessing the effect of Russian VIEW on learner motivation and learning outcomes.

“Inspecting expected aspects”: evaluating how textual features—such as nearby adverbs, verbs, or conjunctions—influence native Russian speakers' tendency to prefer imperfective or perfective aspect. In addition to theoretical contributions, this research is intended to improve the programming logic used to generate Russian VIEW aspect activities, as well as improving pedagogical approaches to aspect.

Student supervision:

PhD Dissertation Committee/Opponent:

2021, Uliana Petrunina, UiT – The Arctic University of Norway

Adjectivization in Russian: an empirical analysis and a resolution of part of speech ambiguity

MA Thesis Committee/Opponent:

2021-pres, Cody Christopherson, Linguistics, BYU

2019-2021, Andrew Watabe, Second Language Teaching, BYU

Incorporating Authentic Video into Language-learning Mobile Applications

2020, Jacob Chan, Linguistics, BYU

Ranking Aspect Importance in Restaurant Reviews

2019-2020, Logan Blackwell, Second Language Teaching, BYU

Portuguese and Chinese ESL Reading Behaviors Compared: An Eye-Tracking Study

2018-2020, Michael Nix, Linguistics, BYU

Parsing an American Sign Language Corpus with Combinatory Categorical Grammar

2018-2019, Josh Hveem, Instructional Psychology & Technology, BYU

RAFT: Readable Arabic Finding Tool

2018-2019, Anastasia Rybakova, Second Language Teaching, BYU

Measuring L2 (Russian) Reading Proficiency Across Various Levels Using Eye Tracking

2018-2019, Lynne Crandall, Linguistics, BYU

Comparing AVL Frequency Bands to Leveled Biology and History Texts

2018-2019, Aislin Davis, Linguistics, BYU

A Comparison of Mobile and Computer Language Testing Administration

- 2017-2018, Travis Moore, Linguistics, BYU
Applying the Developmental Path of English Negation to the Automated Scoring of Learner Essays
- 2017-2018, Aleksandar Dimitrov, Computational Linguistics, Universität Tübingen
VIEW 2.0: An Extensible Platform for Web Based Interactive Language Learning and Research
- 2017, Eduard Schaf, Computational Linguistics, Universität Tübingen
Automatic Visual Input Enhancement for Russian with Intelligent Feedback

Mentored undergraduate research:

- 2021-2022, Sonny George, Congressional semantic shift using word embeddings
- 2021-2022, Josh Gladwell, Digital history capstone
- 2021-2022, Maren Maxfield, Digital history capstone
- 2021-2022, Joseph Corey, Digital history capstone
- 2021, Lindsey Leetham, Old French morphological analyzer and constraint grammar
- 2020-2021, Newel Hirst, Digital history capstone
- 2020-2021, Tim Mabey, Digital history capstone
- 2020-2021, Justin Woffinden, Digital history capstone
- 2020-2021, Ryan Hanson, Digital history capstone
- 2020-2021, George Garcia III, Honors thesis: Effects of air pollution on Twitter sentiment scores
- 2019-pres, Matthew Cheney, Readability data collection using Adaptive Comparative Judgement
- 2018-pres, Nathan Robinson, research assistant
- 2018-2020, Konnor Petersen, HUM, Russian graph2phone
- 2019, Alex Lyman, Machine-learning classification of forum entries
- 2018-2019, Tony Liu, Russian Readability, machine learning
- 2017-2018, Blake Smith, ORCA, Automatic word segmentation evaluation
- 2017-2018, Paul Russavage, DIGHT capstone
- 2017, Anna Rdzin, DIGHT capstone
- 2017, Shay Chestnut, DIGHT capstone

Supervised student programmers:

- 2020-pres, Christian Hall, Y-video
- 2020-2022, Jo Yu Wu, Y-video
- 2020-2022, Esdras Catala, Y-video
- 2020-2021, Sejong Jang, Y-video
- 2019-2021, Matthew Cheney, Crowdsorting, Y-video
- 2019-2020, Robert Hinckley, Y-video
- 2019-2020, Brendan Hatch, Arabic Raft, FLAIR
- 2018-2020, Ryan Echols, FLAIR
- 2018-2020, Grant Perdue, Y-video front-end
- 2018-2020, Konnor Petersen, VIEW, UDAR, Y-video
- 2018, Ileana Heaton, Y-video
- 2019, Rebecca Redd, Y-video front-end
- 2018-2019, Jae Yu, UI/UX Y-video
- 2018-2019, Kate Bradshaw, webclips
- 2018-2019, Michael Briggs, FLAIR
- 2018-2019, Berkley Andrus, Y-video front-end
- 2017-2019, Braden Hutchison, Y-video, Ayamel
- 2017-2019, Santiago Verdu, Y-video, Ayamel

2017-2019, Keaten Perkins, web development
 2017-2018, Alex Dahl, web development
 2017-2018, David Ostler, web development, IC player
 2017-2018, Derek Moss, web development
 2017-2018, Ashley Stevens, web development
 2017, Aaron Cowley
 2017, Dagan Holbrook

Teaching Experience:

Assistant Professor, Brigham Young University, 2017 – present

- DIGHT/LING 360, Text processing with Python
- DIGHT 390R, Approaches to machine learning
- DIGHT 390R, Natural Language Processing for low-resource languages
- LINGC 490R, Deep learning for Natural Language Processing

Visiting Affiliate, Russian 323 (morph. and phon.), Brigham Young University, 2016
 Doctoral Fellow, 1st and 2nd year Russian, University of Tromsø, 2013-2017
 Graduate Teaching Associate, 1st-3rd year Russian and Russian Individualized Instruction;
 Ohio State University, 2010-2013

- Primary instructor for these courses, responsible for all aspects of instruction, including lesson planning, classroom instruction, exam preparation, grading, etc.

Instructor of Russian, Intensive 12-week introductory Russian course, Missionary Training Center, Provo UT, 2002-2007
 Teaching Assistant, First-year Russian, Dixon Middle School, 1994-1995

Other relevant professional work experience:

Team leader, Russian “Oahpa!” online grammar workbook, UiT The Arctic University of Norway, Tromsø 2013-2017
 Team leader, Russian language textbook, Missionary Training Center, Provo UT, 2013
 Training Coordinator, Russian and Ukrainian area, Missionary Training Center, Provo UT, 2007-2009 (hired/trained/supervised 36 Russian and Ukrainian teachers)
 Pedagogical and Linguistic Consultant for Russian, TALL (Technology Assisted Language Learning) ver. 4.1, Missionary Training Center, 2008
 Editor/Reviewer, SILA grammar manual, Missionary Training Center 2007-2009

Service:

Awards Committee, College of Humanities, 2020-pres
 Reviewer, Annual Meeting of the Association for Computational Linguistics, 2019-pres
 Technical specialist, BYU International Cinema, 2018-pres
 Office Representative, Employee Giving Campaign, BYU, 2017-pres
 Chair, ICALL SIG, CALICO, 2017-2019
 Reviewer, Building Educational Applications Workshop (ACL SIG-EDU), 2016-pres
 Reviewer, Natural Language Processing for Computer-Assisted Language Learning (NLP4CALL), 2016-pres
 Reviewer, Journal of Slavic Linguistics, 2017
 Google Summer of Code, Mentor, 2014, 2015, 2016, 2017
 Google Code-In, Mentor, 2014, 2015
 Forskningsdagene science fair, Tromsø, Norway, Sept 19-20 2014
 Buckeye Language Network, Steering Committee, 2010-2013
 Graduate Council on Benefits and Compensation, 2011-2013
 Ohio State University Slavic Department Technology Committee, 2011-2012
 OSU Council of Graduate Students, 2011-2012

Honors:

PhD Fellow, University of Tromsø, 2013 - 2017
FLAS Fellow, Ohio State University, 2011-2012
University Fellow, Ohio State University, 2009-2010
Debate Champion, Saratov State University Debate Competition, 2007
Member, Eta Sigma Phi, Classics Honor Society
Member, Dobro Slovo, National Slavic Honor Society

Foreign residence :

Norway, Tromsø, 2013 - 2015
Russia, Kazan' / Samara / Togliatti / Marks, 2000-2002

Languages Spoken:

English (native)
Russian
 ACTFL Oral Proficiency Interview, *Superior*, 2007
 ACTFL Writing Proficiency Test, *Superior*, 2007 (diagnostic score)
Norwegian
Bosnian/Croatian/Serbian
Czech
Latin

Computer Technologies:

python
linux / bash / git / vim
HFST (lexc / twolc): finite-state morphology and two-level phonology
VISL-CG3: Constraint Grammar for morphosyntactic disambiguation
LaTeX