

Curriculum Vitae

Chuck Bradley, Ph.D.

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Summary

I am an early career researcher (Ph.D. earned in May 2019) with two publications submitted and another in preparation. I have given presentations at multiple international peer-reviewed conferences across various disciplines: sign language linguistics, neurolinguistics, and psycholinguistics. I am highly experienced in using experimental and computational methods, including large-scale online linguistic surveys, and custom-built machine learning analyses to answer theoretical challenges. My extensive project management skills are demonstrated through five years of managing the Sign Language & Linguistics Lab at Purdue University, including the execution of lab experiments, and the supervision and mentorship of undergraduate researchers. I am currently an independent researcher working on writing publications. In December, 2020, I finished collecting and analyzing silent gesture perception data, and am currently drafting the manuscript for the project.

Education

2013 - 2019	Ph.D. in Linguistics , Purdue University, Linguistics Program. Dissertation: <i>Transparency of transitivity in pantomime, sign language</i> [PDF]
2010 - 2013	M.A. in Linguistics , Purdue University, Linguistics Program. Thesis: <i>Motion events and event segmentation in American Sign Language</i> [PDF]
2005 - 2009	B.A. (cum laude), Independent Scholar (Linguistics) , Middlebury College. Thesis: <i>A theoretical look at the Person Agreement Marker in German Sign Language</i>

Employment

2013 - 2018	Manager, Sign Language & Linguistics Lab, Purdue University Supervised teams of up to 10 researchers (training, project management, task priority); Involved in researcher recruitment, evaluation and retention; Assisted researchers in developing research projects and writing them up; Managed data collection and storage; Managed ethics compliance
2011 - 2018	Teaching Assistant (see Teaching)
2017	Research Assistant, Alejandro Cuzo, Purdue University [website] Edited articles and book chapters for publication (non-native English). Designed the Second Language Acquisition Research Lab's website.

Publications and manuscripts

submitted	a. Bradley, C. , Malaia, E., Siskind, J. M. and R. B. Wilbur. Visual form of ASL verb signs predicts non-signer judgment of transitivity. Submitted to <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i> . [manuscript] b. Karabüklü1, S., Wood, S. Sandra, Bradley, C. , Wilbur, R. B., and E. A. Malaia. Sign language learning increases temporal resolution of visual attention. Submitted to <i>Visual Cognition</i> . [manuscript]
in prep.	Bradley, C. Visual form and event semantics predict transitivity in silent gestures: Evidence for compositionality. Target journal: <i>Trends in cognitive science</i> , to be submitted Spring, 2021. [manuscript] [project on GitHub]
data collected	Bradley, C. & R. B. Wilbur (2020). Non-signers converge on meaning, argument structure when viewing silent gestures (Dataset) [project on GitHub]
diss.	Bradley, C. 2019. Transparency of transitivity in pantomime, sign language. (Doctoral dissertation). Purdue University West Lafayette, IN. [PDF]

Presentations at peer-reviewed conferences

TBD	Compositionality in holistic pantomime characterizes a gesture-first protolanguage. Talk to be given at <i>Expression, Language, and Music 1</i> . Hartford, CT, USA. May, 2021.
2021	Systematicity in gesture production, perception may support sign language emergence. Poster presented at the <i>CUNY Conference on Human Sentence Processing 34</i> . Philadelphia, PA, USA. March, 2021. [abstract]
2020	<ul style="list-style-type: none"> a. Evidence for argument structure in the form of pantomime. Poster presented at <i>Experiments in Linguistic Meaning 1</i>. Philadelphia, PA, USA. September, 2020. b. Evidence for subunit structure when gesturers communicate in/transitive actions. Poster presented at <i>The CUNY Conference on Human Sentence Processing 33</i>. Amherst, MA, USA. March, 2020. [poster]
2018	Can formal features be predicted from form? Using Machine Learning to predict transitivity class from the form of pantomime and ASL classifier constructions. Poster presented at <i>Formal and Experimental Advances in Sign Language Theory 7</i> . Venice, IT. June, 2018. [abstract]
2017	<ul style="list-style-type: none"> a. with Siskind, J.M., and R. Wilbur. Neural representation of minimal syntactic units. Poster presented at <i>Cognitive Computational Neuroscience 1</i>. New York, NY, USA. August, 2017. [abstract] b. with H. Nassar. Rapid processing of ELAN data: Quick and dirty numbers for statistical analysis. Poster presented at <i>Formal and Experimental Approaches to Sign Language Theory 6</i>. Reykjavik, Iceland. June, 2017. [abstract]
2010	with V. Lee-Shoenfeld. A theoretical look at the Person Agreement Marker in German Sign Language. Poster presented at <i>Theoretical Issues in Sign Language Research 10</i> . West Lafayette, IN, USA.

Select software and projects

Used expertise in computational linguistics and research programming to conceive and script software for improved data (pre-)processing and analysis. Selected projects include:

2020	ELAN-overlap [https://github.com/C-huck/ELAN-overlap] (completed) Extracts temporal information about annotations on different tiers in ELAN, a video annotation tool. Useful for quantifying simultaneous data, such as gesture+speech (gesture studies), speech+touch (infant word learning studies), manual+non-manual action (sign language studies), among other applications.
2019	<ul style="list-style-type: none"> a. ASL-LEX-iconicity [https://github.com/C-huck/ASL-LEX-iconicity] Simplified analysis showing how to use machine learning techniques to classify lexical category information from a small corpus of ASL signs (ASL-LEX.org). Algorithm infers lexical category information from both visual and lexical information. b. simple-tracker [https://github.com/C-huck/simple-tracker] Computes Lucas-Kanade optical flow for a user-defined point within a user drawn window. The algorithm attempts to track that point across all frames in the video. The point's total displacement is overlaid on top of the video, as well as the path it traces. Creates a .csv file of displacement information. An arbitrary number of points may be tracked. Useful for determining overall 2D displacement of, e.g., hands across a video. Can also be used to track relative movement (e.g., of one hand with respect to the other). c. video-segment [https://github.com/C-huck/video-segment] Short heuristic to automatically find and clip gestures/ body movement in unsegmented video. Identified clips are then ready for analysis, or inclusion in, e.g., perception studies.

Teaching

as **Primary Instructor**

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| 2016 - 2018 | a. Syntax and Semantics, Purdue University (3 semesters)
Created all course materials; Taught all sections; Sole grader
Sample materials: syllabus slide final exam |
| 2015 - 2016 | b. Introduction to Linguistics, Purdue University (2 semesters)
Created all course materials; Taught all sections; Sole grader
Sample materials: syllabus slide final exam |

as **Teaching Assistant**

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| 2011 - 2015 | a. Introduction to Linguistics, Purdue University (4 semesters)
Grader; Helped create exams, study guides
b. American Deaf Community: Language, Culture, and Society, Purdue University (1 semester)
Grader; Helped create exams, study guides
c. American Sign Language levels 1, 2, and 4, Purdue University (3 semesters; volunteer)
Grader and proctoring; Occasional guest lecturer |
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Awards and Grants

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| 2018 | Travel Grant, School of Interdisciplinary Studies, Purdue University (\$1,000)
To cover costs of attending FEAST7, Venice, IT |
| 2013 - 2014 | Lynn Fellowship, Interdisciplinary Studies, Purdue University (\$45,518.50)
more information |
| 2010 - 2011 | David M. Knox Fellowship, The Graduate School, Purdue University (\$48,203.50)
more information |

Service

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| 2013 - 2015 | President, Purdue Linguistics Association (PLA) website |
| 2012 - 2013 | Secretary, PLA |
| 2013, 2014 | Co-chair, 9th & 10th Annual PLA Student Symposium; Co-editor of Proceedings of the 2014 PLA Symposium proceedings |
| 2013 | Reviewer, 9th Annual PLA Student Symposium |

Languages

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| natural | English (native); American Sign Language (intermediate); Latin, French (reading competency); Mandarin Chinese (beginner) |
| artificial | Python (data visualization & analysis, corpus work), SQL (corpus work), L ^A T _E X (typesetting for communication/dissemination), HTML/CSS/PHP (web-design for communication/dissemination), Amazon Mechanical Turk API (online data collection); MATLAB, R (learning/basic data manipulation and processing). |

Skills

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| neuroimaging | Primary operator GE 3T scanners with extensive scanning experience; fMRI analysis in FSL, AFNI, and SPM8; ROI analysis in MarsBaR 0.44.; Familiar with PyMVPA. |
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References

Ronnie Wilbur, Ph.D.

Supervisor (8 years), thesis chair
Professor
Speech, Language & Hearing Sciences,
Linguistics program
Purdue University
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Evie Malaia, Ph.D.

Mentor (5 years), thesis committee member
Associate Professor
Communicative Disorders

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