

## Linguistics 327: Research on Braille



Rice University

Fall 2024

## Syllabus

Class Meetings: MWF 2:00-2:50, Herring 125

Course Canvas Site: <https://canvas.rice.edu/courses/72247>

Instructor: Robert Englebretson ("Dr. E") he/him/his  
 Physical Office: Herring 206  
 Office Hours: Thurs. 2:00-4:00pm in person, and By Appointment on Zoom  
 E-mail: [reng@rice.edu](mailto:reng@rice.edu) (I aim to answer emails within 24 hours, usually sooner.)  
 Office Phone: 713 348-4776 (Leave a voicemail and I will return your call ASAP.)

### Course Objectives and Learning Outcomes

This course introduces students to the perceptual, cognitive, linguistic, and social underpinnings of braille. It provides a brief introduction to the field of Disability Studies and the history and social construction of disability, with a focus on blindness and visual impairment. It explores the place of braille literacy in the reading sciences, and the role of the reading sciences in braille pedagogy and development. The course is conducted as a seminar, focusing on discussion and analysis of source readings, videos, and hands-on experience with braille.

Upon completion of this course, students will:

- ✓ Have a basic understanding and appreciation of braille and a grounding in the braille-research literature.
- ✓ Have a basic awareness of the disability rights movement in the United States, the social construction of blindness, and the role of braille in the lives of those who use it.
- ✓ Have learned to critically analyze published research articles, to compare and evaluate studies that propose contradictory results, and to consider how the positionalities of researchers may lead to biases in the questions they think to ask and the methods they use to answer them.
- ✓ Have had the opportunity to propose a braille-related research question and to design a study to address it.

This is not a course to teach braille for professional use or competence. If you wish to pursue learning braille professionally, please talk with me, and I can point you to appropriate resources elsewhere.

This course has previously been offered under LING 409, the department's "Special Topics in Linguistics" series. If you already have taken it in that format, you cannot retake it as LING 327.

### Required Texts And Materials

A collection of published articles and videos, as listed in the bibliography of this syllabus. You can access these from the 'Resource List' link on our Canvas site.

## Course Requirements and Grading

- |   |     |
|---|-----|
| ❑ Attendance and active participation in class      | 10% |
| ❑ Discussion points (course blog) before each class | 35% |
| ❑ Five short homework assignments                   | 25% |
| ❑ Research Proposal                                 | 30% |

Course letter grades will be assigned as follows:

0-59.99%	60-69.99%	70-79.99%	80-89.99%	90-100%
F	D	C	B	A

Designations of plus and minus will be given to grades ranging within 1 percentage point of the cutoff. For example: 99.0-100% is an A+, 90.0-90.99% is an A-, 89.0-89.99% is a B+, and so on. Students who earn less-than 60% will fail the course.

This course has no midterm and no final exam. There are however **a lot** of readings, which you are expected to carefully read and actively discuss on the course blog and in class.

**ATTENDANCE (ABSENCE POLICIES):** Because this is a seminar-style class, your involvement and attention is crucial! Students are expected to attend class. If you know you will have to miss a class ahead of time, please let me know. More than three non-illness-related absences will lower your participation grade by 1 percentage point per occurrence.

**DISCUSSION POINTS:** For each day with assigned readings (indicated by an asterisk on the course schedule), you are required to submit three discussion points: questions, quibbles, observations, or suggestions for follow-up research. (Note this means three discussion points per class day, not three for each article.) Submit your discussion points as a blog entry on the course discussion thread on Canvas by noon on the day we will be discussing the reading. You are encouraged to read and comment on each other's blog entries if you wish to do so. Discussion points are worth 35% of your course grade. You have three freebees! But failure to submit discussion points for more than three of the required days this semester will lead to a deduction of 2 percentage points from your course grade for each day skipped. Blog entries are due by noon on the day of discussion.

**HOMEWORK ASSIGNMENTS:** There will be five short homework assignments due throughout the semester, as shown on the course schedule. These are designed to give you practice in reading and writing the basics of English Braille, or give you the opportunity to write a short opinion piece related to issues discussed in class.

**RESEARCH PROPOSAL:** Each student is expected to submit a short paper (5-10 print pages), in the form of a preliminary research proposal. You will not need to carry out the study, but your paper must do the following: (1) Identify a research question, review prior literature, and explain why your question is an interesting/worthwhile topic to pursue; (2) propose precisely how you would conduct the study (subjects, materials, methods, etc.); (3) explain why the results of your question would be of significance to linguistics and cognitive science, and, conversely, why the results of your study would matter to the teaching, reading, or development of braille. You will present a quick summary of your proposal in class during the last week of the semester. The final written version of the paper is due on Canvas by 11:59pm on Dec. 17, the last day of the final exam period.

## **Rice Honor Code**

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at <http://honor.rice.edu/honor-system-handbook/>. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

## **Disability Support Services**

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / [adarice@rice.edu](mailto:adarice@rice.edu) / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

## **Mental Health Statement**

The wellbeing and mental health of students is important; if you are having trouble completing your coursework, please reach out to the Wellbeing and Counseling Center.

Rice University provides cost-free mental health services through the Wellbeing and Counseling Center to help you manage personal challenges that threaten your personal or academic well-being. If you believe you are experiencing unusual amounts of stress, sadness, or anxiety, the Student Wellbeing Office or the Rice Counseling Center may be able to assist you. The Wellbeing and Counseling Center is located in the Gibbs Wellness Center and can be reached at 713-348-3311 (available 24/7).

## **Title IX Responsible Employee Notification**

Rice encourages any student who has experienced an incident of harassment, pregnancy discrimination or gender discrimination, or relationship, sexual, or other forms of interpersonal violence to seek support from The SAFE Office.

At Rice University, unlawful discrimination in any form, including sexual misconduct, is prohibited under Rice Policy on Harassment and Sexual Harassment (Policy 830) and the Student Code of Conduct. As the instructor and a responsible employee, I am required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to the Title IX Coordinator on campus. Although responsible employees are required to make this notification, it is the student's choice to pursue a formal complaint. The goal is to make sure that students are aware of the range of options available and have access to the resources when in need. For more information, please visit [safe.rice.edu](http://safe.rice.edu), [titleix.rice.edu](http://titleix.rice.edu), or email [titleixsupport@rice.edu](mailto:titleixsupport@rice.edu).

## Course Outline

\* Each item marked with an asterisk requires blog posts, due by noon on the Canvas Discussion thread. (Three freebees.)

Readings preceded by **Ref.** are included only for reference purposes. Please don't read them (unless you enjoy reading things like reference books and dictionaries...) . You should be aware of what they are and how to find them if you wish to look something up.

<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Due</b>
<b>WEEK 1</b>			
8/26	Introduction and overview of braille #1	None	
8/28	Introduction and Overview of Braille #2	None	
8/30	'Writing system' vs 'code'	*Englebretson et al. 2023	
<b>WEEK 2</b>			
9/2	No Class (Labor Day)		
9/4	Braille in the wider culture and environment	*Kleege 2006	
9/6	Disability studies; ableism	None	
<b>WEEK 3</b>			
9/9	Disability rights in the US	None	HW #1
9/11	Discussion: History and social construction of disability	*"Crip Camp" Documentary	
9/13	History and social construction of blindness	*Ferguson 2001 ch 2	
<b>WEEK 4</b>			
9/16	Language development and blindness / 'verbalism'	*Bedny et al. 2019	
9/18	Origins & development of braille	Lorimer 2000; Campsie 2021	
9/20	Overview of Unified English Braille (UEB)	Ref. ICEB 2013	HW #2
<b>WEEK 5</b>			
9/23	Blindness, touch, & braille #1	*Heller & Gentaz 2014 ch 7 & 9	
9/25	Blindness, touch, and braille #2	*Millar 1997 ch 2	
9/27	Blindness, touch, & braille #3	*Bola et al. 2016; *Oshima et al. 2014.	
<b>WEEK 6</b>			
9/30	Hands and fingers	*Wright et al. 2009; *Hughes et al. 2014	
10/2	Finger tracking	None	HW #3
10/4	Neuroplasticity	*Bedny & MacSweeney 2019	

WEEK 7		
10/7	The science of (print) reading	*Castles et al. 2018
10/9	Comparing print and braille reading #1	*Perea et al. 2012 *Veispak et al. 2012
10/11	Comparing print and braille reading #2	*Veispak et al. 2013; *Wetzel & Knowlton 2000
WEEK 8		
10/14	No Class (Midterm Recess)	
10/16	Contractions #1	*Hamp & Caton 1984; *Savaiano and Kearns 2016 HW #4
10/18	Contractions #2	Millar 1997 Ch 6
WEEK 9		
10/21	Error analysis	*Wells-Jensen et al. 2007
10/23	The ABC Braille Study	*Wall Emerson et al. 2009
10/25	Sublexical structure in braille reading	* Fischer-Baum and Englebretson 2016
WEEK 10		
10/28	Overview of Fischer-Baum, Englebretson, & Holbrook research project	None
10/30	Sublexical structure in braille writing	* Englebretson et al. 2024
11/1	Tactile graphics	None
WEEK 11		
11/4	Teachers of Students with Visual Impairments	*Wormsley Keynote Video
11/6	Correlates of braille literacy	*Ryles 1996
11/8	Demographics of braille literacy	*Sheffield et al. 2022
WEEK 12		
11/11	Braille and the IPA	Englebretson 2009
11/13	Braille displays	None
11/15	Braille literacy in adulthood after vision loss	None
WEEK 13		
11/18	Braille in STEM	None
11/20	Braille music notation; braille around the world	Refs. (Music Braille Code 2015; World Braille Usage 2013)
11/22	Web accessibility	None

## WEEK 14

11/25	Summary / wrap-up / future directions	None
11/27	No Class (Thanksgiving Recess)	
11/29	No Class (Thanksgiving Recess)	

## WEEK 15

12/2	Student presentations #1	n/a	HW #5
12/4	Student presentations #2	n/a	
12/6	Student Presentations #3	n/a	

## FINALS WEEK

12/17 Research Proposal Due by 11:59pm

### Readings and Videos, Listed in the order they are assigned.

Englebretson, Robert, M. Cay Holbrook, and Simon Fischer-Baum. 2023. "A position paper on researching braille in the cognitive sciences: De-centering the sighted norm". *Journal of Applied Psycholinguistics*, 44(3), 400-415. <http://doi.org/10.1017/S0142716423000061>

Kleege, Georgina. 2006. "Visible braille/invisible blindness." *Journal of Visual Culture*, 5 (2): 209-218.

Newnham, Nicole and James LeBrecht. 2020. *Crip Camp: A Disability Revolution*. Higher Ground Productions. <https://www.youtube.com/watch?v=OFS8SpwioZ4>

Ferguson, Ronald J. 2001. *We Know Who We Are: A History of the Blind in Challenging Educational and Socially Constructed Policies: A Study in Policy Archeology*. San Francisco: Caddo Gap Press. (Ch. 2, Pp. 37-64.)

Bedny, Marina, Jorie Koster-Hale, Giulia Elli, Lindsay Yazzolino, and Rebecca Saxe. 2019. "There's more to 'sparkle' than meets the eye: Knowledge of vision and light verbs among congenitally blind and sighted adults." *Cognition*, 189: 105-115.

Lorimer, Pamela. 2000. "Origins of braille". In *Braille into the Next Millennium*, 18-39. Washington, DC: Library of Congress, National Library Service for the Blind and Physically Handicapped.

Campsie, Philippa. 2021. Charles Barbier: A hidden story. *Disability Studies Quarterly*, 41(2).

International Council on English Braille. 2013. *The Rules of Unified English Braille* 2nd ed. [http://www.iceb.org/Rules%20of%20Unified%20English%20Braille%202013%20\(linked\).pdf](http://www.iceb.org/Rules%20of%20Unified%20English%20Braille%202013%20(linked).pdf)

Heller, Morton A. and Edouard Gentaz. 2014. *Psychology of Touch and Blindness*. New York: Psychology Press. (Ch. 7 & 9, Pp. 114-131 & 150-164.)

Millar, Susanna. 1997. *Reading by Touch*. New York: Routledge. (Ch. 2, pp. 14-55.)

- Bola, Łukasz, et al. 2016. "Braille in the Sighted: Teaching Tactile Reading to Sighted Adults" *PLoS ONE*.
- Oshima, K., T. Arai, S. Ichihara, and Y. Nakano. 2014. "Tactile sensitivity and braille reading in people with early blindness and late blindness". *Journal of Visual Impairment and Blindness*, 108 (2): 122-131.
- Wright, Tessa, Diane P. Wormsley, and Cheryl Kamei-Hannan. 2009. "Hand movements and braille reading efficiency: Data from the Alphabetic Braille and Contracted Braille Study". *Journal of Visual Impairment & Blindness* 103 (10): 649-661.
- Hughes, Barry, Amber McClelland, & Dion Henare. 2014. "On the nonsmooth, nonconstant velocity of braille reading and reversals." *Scientific Studies of Reading*, 18 (2): 94-113.
- Bedny, Marina and Mairéad MacSweeney. 2019. "Insights into the neurobiology of language from individuals born blind or deaf." In Peter Hagoort, Ed. *Human Language : From Genes and Brains to Behavior*, 509-525. Cambridge, MA: MIT Press.
- Castles, Anne, Kathleen Rastle, and Kate Nation. 2018. "Ending the reading Wars: Reading acquisition From novice to expert." *Psychological Science in the Public Interest*, 19(1), 5–51.
- Perea, Manuel, Cristina García-Chamorro, Miguel Martín-Suesta, and Pablo Gómez. 2012. "Letter position coding across modalities: the case of braille readers". *PLoS ONE* 7 (10): e45636.
- Veispak, Anneli, Bart Boets, and Pol Ghesquière. 2012. "Parallel versus sequential processing in print and braille reading". *Research in Developmental Disabilities* 33 (6): 2153-2163.
- Veispak, Anneli, Bart Boets, and Pol Ghesquière. 2013. "Differential cognitive and perceptual correlates of print reading versus braille reading". *Research in Developmental Disabilities* 34 (1): 372-385.
- Wetzel, Robin and Marie Knowlton. 2000. "A comparison of print and braille reading rates on three reading tasks". *Journal of Visual Impairment and Blindness* 94 (3): 146-154.
- Hamp, Eric P. and Hilda Caton. 1984. "A fresh look at the sign system of the braille code". *Journal of Visual Impairment and Blindness* 78 (5): 210-214.
- Savaiano, Mackenzie and Devin M. Kearns. 2016. "Alignment of braille and print English for learning and instruction." Paper presented at the 2016 General Assembly of the International Council on English Braille, Baltimore, MD.
- Millar, Susanna. 1997. *Reading by Touch*. New York: Routledge. (Ch. 6, pp. 176-214.)
- Wells-Jensen, Sheri, Aaron Schwartz, and Bradley Gosche. 2007. "A cognitive approach to braille errors". *Journal of Visual Impairment and Blindness* 101: 416-428.
- Wall Emerson, Robert, M. Cay Holbrook, and Frances Mary D'Andrea. 2009. "Acquisition of literacy skills by young children who are blind: Results from the ABC Braille Study". *Journal of Visual Impairment & Blindness* 103 (10): 610-624.

- Fischer-Baum, Simon and Robert Englebretson. 2016. "Orthographic units in the absence of visual processing: Evidence from sublexical structure in braille." *Cognition*, 153, 161-174.
- Englebretson, Robert, M. Cay Holbrook, Rebecca Treiman, and Simon Fischer-Baum. 2024. "The primacy of morphology in English Braille spelling: An analysis of bridging contractions." *Morphology* [Special Issue: Morphology and Spelling], , 34(2), 125-150. <http://doi.org/10.1007/s11525-023-09413-8>
- Wormsley, Diane P. 2021. "The Bumpy Road to Literacy." Keynote Address Presented at Tactile Reading 2021, Oslo, Norway. [https://www.youtube.com/watch?v=\\_nBaEUe26d8](https://www.youtube.com/watch?v=_nBaEUe26d8)
- Ryles, Ruby. 1996. "The impact of braille reading skills on employment, income, education, and reading habits." *Journal of Visual Impairment & Blindness*, 90, 219-226.
- Sheffield, Rebecca M., Frances Mary D'Andrea, Val Morash, and Sarah Chatfield. 2022. How many braille readers?: Policy, politics, and perception. *Journal of Visual Impairment & Blindness*, 116(1), 14-25.
- Englebretson, Robert. 2009. "An overview of IPA Braille: An updated tactile representation of the International Phonetic Alphabet". *Journal of the International Phonetic Association* 39 (1): 67-86.
- Braille Authority of North America. 2015. *Music Braille Code*. [www.brailleauthority.org/music/Music\\_Braille\\_Code\\_2015.pdf](http://www.brailleauthority.org/music/Music_Braille_Code_2015.pdf)
- Perkins School for the Blind, International Council on English Braille, & Library of Congress. (2013). *World Braille Usage* (3rd ed.). <https://www.perkins.org/wp-content/uploads/2021/07/world-braille-usage-third-edition.pdf>