

Research in the CNSL Lab

TOPICS OF RESEARCH

- Investigating how the human mind and brain learn and use written language
- Neural plasticity and recovery from aphasia (language deficits due to brain injury)
- The role of motor experience in acquiring written language
- Individual differences in reading & spelling
- Bilingualism and biscriptalism (reading and writing in different alphabets)

GOALS

- Understanding the cognitive and neural bases of learning through language
- Increasing the breadth and depth of knowledge about the lexical and sub-lexical systems and how they are represented in the brain
- Practical implications include the optimization of the effectiveness of interventions and improvement in educational practices



Research Assistants in this Lab will:

- Read and analyze cognitive science articles
- Recruit participants and administer behavioral tasks including attention, memory, and language
- Collect behavioral and neuroimaging (MRI, fMRI) data

Cognitive and Neural Science of Learning Lab



In the Department of
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What we do

OUR PHILOSOPHY

We integrate information from cognitive science, cognitive psychology, neuropsychology, neuroscience, psycholinguistics, and other disciplines to inform our research practices.

EXPERIMENTAL METHODS

- Behavioral methods
- Neural / neuroimaging (MRI, fMRI)
- Advanced statistical analyses (multilevel modeling, Monte Carlo methods, Bayesian approaches)
- Toolkits for processing spelling and pronunciation errors

POPULATIONS WE STUDY

- Neurotypical/neurologically intact/healthy individuals (adults)
- Individuals recovering from post-stroke aphasia (individuals who have suffered neurological injury/lesion in the brain)
- Individuals with developmental or acquired disorders (dyslexia, dysgraphia)

CURRENT PROJECTS

The Cognitive and Neural Basis of Word Learning in Aging, Stroke, and Developmental Language Impairment

Sublexical Representations in Written Language

Temporal Deficits in Anomic Aphasia

RECENT PUBLICATIONS AND PRESENTATIONS

Publications

Washington, P. N., & Wiley, R. W. (2022). The contributions of proficiency and semantics to the bilingual sentence superiority effect. *Bilingualism: Language and Cognition*, 1–11.

Wiley, R.W. & Rapp, B. (2021) The Effects of handwriting experience on literacy learning. *Psychological Science*, 32(7).

Conference Activity

PG Toolkit: A New Tool for Measuring Spelling-Sound Consistency. Wiley, R. W. Key, K. & Purcell, J. J. Roundtable presentation, 2023 annual meeting of the American Educational Research Association, Chicago, IL.

Evaluation of lexical and activation priming components of a repetition treatment for word retrieval in aphasia. Martin, N., Wiley, R. W., Schlesinger, J., & Obermeyer, J. Poster presentation, 2023 Clinical Aphasiology Conference, Atlantic City, NJ.

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