

Brennan R Payne, PhD

Assistant Professor of Psychology, University of Utah

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Professional Appointments

Assistant Professor

Department of Psychology (2017 - Present)
Cognition and Neural Science Program
College of Social and Behavioral Sciences
University of Utah

Faculty

Interdepartmental Program in Neuroscience (2017 - Present)
Brain and Behavior Division
University of Utah

Faculty

Center on Aging (2017 - Present)
University of Utah

Adjunct Assistant Professor

Department of Communication Sciences and Disorders (2020 - Present)
College of Health
University of Utah

Education and Training

Postdoctoral Research Associate

The Cognition and Brain Laboratory (2014 - 2017)
Department of Psychology, Neuroscience Program, and The Beckman Institute
University of Illinois

PhD, MS (2009-2014)

Cognitive Science of Teaching and Learning, Department of Educational Psychology
University of Illinois

BA (2005-2009)

Psychology and Cognitive Science
State University of New York at Oswego

Awards and Fellowships

1. *NIH-LRP Awardee* (2018). National Institutes of Health Loan Repayment Program for Clinical Research. NIH L30AG051229. “Neurocognitive Aging and Individual Differences in Language Comprehension and Memory” (Renewal).
2. *APS Rising Star Award* (2017). Association for Psychological Science

3. *APA Early Career Award* (2017). Society for Experimental Psychology and Cognitive Science (Division 3 of The American Psychological Association)
4. *Vice President's Clinical and Translational Research Scholar* (2017). University of Utah School of Medicine
5. *Fellow of the Psychonomic Society* (2017)
6. *The Thomas and Margaret Huang Award for Research in Human Computer Intelligent Interaction* (2015), Huang Fund, Beckman Institute, University of Illinois. Inaugural Award
7. *NIH -LRP Awardee* (2015). National Institutes of Health Loan Repayment Program for Clinical Research. NIH L30AG051229. "Neurocognitive Aging and Individual Differences in Language Comprehension and Memory".
8. *Beckman Institute Graduate Research Fellowship* (2013), Human Perception and Performance & Cognitive Neuroscience. University of Illinois
9. *The Paul D. Doolen Fellow of Research in the Study of Aging* (2013), University of Illinois
10. *National Institutes of Health Training Fellowship* (2012), "Language Processing: A Training Program" T32-HD055272. Specialization in the Cognitive Neuroscience of Language
11. *The William Chandler Bagley Doctoral Scholarship* (2012), University of Illinois
12. *The Ray Simpson Memorial Award* (2012)
13. *Raymond W. Kulhavy Scholarship for Research in the Cognitive Science of Learning* (2012), University of Illinois
14. *The Helen B. Daly Award for Excellence in Psychological Research* (2009), SUNY Oswego
15. *Sigma Xi Research Society's Best Oral Presentation in Psychology Award* (2009), SUNY Oswego

Research Support

Active Support

1. "Neurocognitive Effects of Listening Effort in Age-Related Sensorineural Hearing Loss." Utah Center on Aging. Role: Principal Investigator. (Co-I: Dr. Sarah Hargus Ferguson). \$20,000. 2020-2021. (currently delayed due to COVID-19)
2. "Neural Underpinnings of Attention in the Real World: A workshop on Co-registration of Eye Movements and EEG". National Science Foundation (NSF BCS- 2032183). Role: Co-Principal Investigator. (with Dr. Liz Schotter (PI) and Dr. Trafton Drew (Co-PI)). (2021-2022). \$25,000.

Under Review

1. "Neural mechanisms of language and memory processes in effortful listening among adults with sensorineural hearing loss". National Institutes of Health NIDCD Early Career Research Award (R21). Role: Principal Investigator. (Co-I: Dr. Sarah Ferguson).

2. “Personality predictors of intraindividual variability in daily cognitive life.” National Institutes of Health (NIA-R21). Role: Co-Investigator. (PI: Dr. Patrick Hill).

Completed

1. “Neural Activity and Emotion Processing.” Google X Research Grant. Role: Principal Investigator. \$208,895. 2018-2020.
2. “A Causal Test of Neural Predictive Coding in Language Comprehension: Insights from Simultaneous Electrophysiology and Navigated Transcranial Magnetic Stimulation”. Research Incentive Seed Grant. University of Utah Office of the Vice President of Research. Role: Principal Investigator. \$20,000. 2018-2020.
3. “The Effects of Text Captioning on the Neurocognitive Workload of Speech Understanding”. CaptionCall Telecommunications Research and Development Grant. Role: Principal Investigator. \$166,961. 2018-2019.
4. “A High-Density EEG Facility for Interdisciplinary Research.” Office of the Vice President for Research. Research Instrumentation Fund. Role: Co-Investigator (with Dr. Matt Euler and Dr. Trafton Drew). \$102,720. 2018.
5. University of Illinois Campus Research Board CRB-13060. “The Effects of Working Memory Training on Language Comprehension among Younger and Older Adults” (01/01/2012-01/01/2013). Role. Co-PI (with Elizabeth Stine-Morrow). \$20,420. 2014-2015.

Funding for Students

1. NSF Graduate Research Fellowship Mentee: Sara LoTempio

Not Funded

1. “Neuromodulation of human language and memory functioning via theta burst stimulation”. NEXUS Pilot Grant. Role: Principal Investigator (Co-I: Dr. Brian Mickey). 2020.
2. “Personality and Healthy Cognitive Aging: Predicting Variability in Older Adults’ Daily Cognitive Functioning”. The Velux Stiftung Foundation (Healthy Ageing Research Grant). Role: Co-Investigator (PI: Dr. Patrick Hill). 2020.
3. “Cognitive and Neural Mechanisms Underlying the Relationship between Music and Language Processing”. NIH R21. Role: Principal Investigator (MPI with Dr. Liz Schotter. Co-I: Dr. Jennifer Bugos). 2019.
4. “Bringing Cognitive Neuroscience to the Clinic: Evaluating Novel EEG Markers of Early Alzheimer’s and Non-Alzheimer’s Dementia”. Dana Foundation-David Mahoney Neuroimaging Grant Program. Role: Co-Investigator (PI: Dr. Matt Euler). 2019.
5. “Sense of Purpose and Cognitive Resilience: Integrative Data Analysis of Multiple Aging Studies”. NIH R03AG058904. Role: Principal Investigator (PI with Dr. Pat Hill). 2018
6. “Neurophysiological Mechanisms of Propofol’s Antidepressant Effects”. Utah Neuroscience Initiative Grant. Role: Co-Principal Investigator. (with Dr. Brian Mickey and Dr. Scott Tadler). 2018

7. “Neuro-cognitive mechanisms linking music and language: Working Memory and Prediction”. National Institutes of Health R21. Role: Principal Investigator (MPI with Dr. Liz Schotter. Co-I: Dr. Jennifer Bugos). 2018.

Publications

Total N: 51

Citations: 1217, h-index: 18, i10-index: 28

Reprints available: <http://lama-lab.com>

*Student author

Journal Articles

1. **Payne, B.R.**, Federmeier, K.D. & Stine-Morrow, E.A.L. (2020). Literacy skill and intra-individual variability in eye fixation durations during reading: Evidence from a diverse community-based adult sample. *Quarterly Journal of Experimental Psychology*. In press.
2. Hill, P.L., Aschwanden, D. **Payne, B.R.**, & Allemand, M. (2020). Daily cognitive complaints and engagement in older adulthood: Personality traits are more predictive than cognitive performance. *Psychology and Aging, 35*, 317-328.
3. LoTempio, S.,* Scott., E.,* Hopman, R.J.,* McDonnel, A.,* McKinney, T.,* **Payne, B.R.**, & Strayer, D. (2020). Nature as a potential moderator of the error-related negativity: A registered report. *International Journal of Psychophysiology*. In press.
4. Dewitte, L, Lewis, N.A., **Payne, B.R.**, Turiano, N.A., & Hill, P.L., (2020). Cross-lagged relationships between sense of purpose in life, memory performance, and subjective memory beliefs in adulthood over a 9-year interval. *Aging and Mental Health*. In press.
5. Lohani, M., McElvaine, K., **Payne, B.R.**, Mitcheom, K., & Britton, W. (2020). A longitudinal training study to delineate the specific causal effects of open monitoring versus focused attention techniques on emotional health. *Complementary Therapies in Medicine*. In press.
6. Ng, S., **Payne, B. R.**, Liu, X., Anderson, C. J., Federmeier, K. D., & Stine-Morrow, E. A. L. (2020). Execution of lexical and conceptual processes in sentence comprehension among adult readers as a function of literacy skill. *Scientific Studies of Reading, 20*, 338-355.
7. **Payne, B.R.**, Stites, M.C., & Federmeier, K.D. (2019). Event-related brain potentials reveal how multiple aspects of semantic processing unfold across parafoveal and foveal vision during sentence reading. *Psychophysiology, 56*, 1-15.
8. **Payne, B.R.** & Federmeier, K.D. (2019). Individual differences in reading speed are linked to variability in the processing of lexical and contextual information: Evidence from single-trial event-related brain potentials. *65, Word. 252-272.*¹
9. Jackson, J.J. Hill, P.L., **Payne, B.R.**, Parisi, J., & Stine-Morrow, E.A.L. (2019) Linking openness to cognitive ability in older adulthood: The role of diversity in daily behavior. *Aging and Mental Health, 26*, 1-9.
10. Schotter, E.R., & **Payne, B.R.** (2019). Eye movements and comprehension are important to reading. *Trends in Cognitive Sciences, 23*, 811-812.

¹Special Issue: Language and the Brain

11. Chandler, M.C.,* McGowan, A.L.,* Wray, A.H., **Payne, B.R.**, & Pontifex, M.B. (2019). Aerobic fitness relates to differential attentional but not language-related cognitive processes. *Brain and Language, 198*, 1-9.
12. Lohani, M., **Payne, B.R.**, & Strayer, D.L. (2019). A review of psychophysiological measures to sense and assess cognition and performance in driving research. *Frontiers in Human Neuroscience, 13*, 1-27.
13. **Payne, B.R.** & Federmeier, K.D. (2018). Contextual constraints on lexico-semantic processing in aging: Evidence from single-word event-related brain potentials. *Brain Research, 1687*, 117-128.
14. Ng, S., **Payne, B.R.**, Federmeier, K.D., & Stine-Morrow, E.A.L. (2018). How struggling adult readers use contextual information when comprehending speech: Evidence from event-related potentials. *International Journal of Psychophysiology, 125*, 1-9.
15. Gross, A.L., **Payne, B.R.**, Cassanova, R., Davoudzadeh, P., Dzierzewski, J., Farias, S.Giovannetti, T., Ip, E., Marsiske, M., Rebok, G., Schaie, W., Thomas, K., & Willis, S., & Jones, R.N. (2018). The ACTIVE conceptual framework as a structural equation model. *Experimental Aging Research, 44*, 1-17.
16. Lohani, M., **Payne, B.R.**, & Issacowitz, D. (2018). Emotional coherence in early and later adulthood during sadness reactivity and regulation. *Emotion, 18*, 789-804.
17. **Payne, B.R.** & Federmeier, K.D. (2017). Event-related brain potentials reveal age-related changes in parafoveal-foveal integration during sentence processing. *Neuropsychologia, 106*, 358-370.
18. **Payne, B.R.** & Federmeier, K.D. (2017). Pace yourself: Intraindividual variability in context use during reading revealed by self-paced event-related brain potentials. *Journal of Cognitive Neuroscience, 29*, 837-854.
19. Hill, P.L. & **Payne, B.R.** (2017). Don't forget the person when promoting healthy cognitive aging: A comment on Smith (2016). *American Psychologist, 72*, 390-392.
20. **Payne, B.R.** & Stine-Morrow, E.A.L. (2017). The effects of home-based cognitive training on verbal working memory and language comprehension in older adulthood. *Frontiers in Aging Neuroscience, 9*, 1-20.
21. Ng, S., **Payne, B.R.**, Steen, A.A., Federmeier, K.D., & Stine-Morrow, E.A.L. (2017). Use of contextual information by struggling adult readers: Evidence from reading time and event-related brain potentials. *Scientific Studies of Reading, 21*, 359-375.
22. Farias, S., Giovannetti, T., **Payne, B.R.**, Marsiske, M., Rebok, G., Schaie, W., Thomas, K., Willis, S., Dzierzewski, J.M., Unverzagt, F., & Gross, A.L. (2017). Self-perceived difficulties in everyday function precede cognitive decline among older adults in the ACTIVE study. *Journal of the International Neuropsychological Society, 23*, 1-9.
23. Steen-Baker, A., Ng, S., **Payne, B.R.**, Federmeier, K.D., & Stine-Morrow, E.A.L. (2017). The effects of context on processing words during sentence reading among adults varying in age and literacy skill. *Psychology and Aging, 32*, 460-472.
24. Lewis, N.A., Turiano, N.A., **Payne, B.R.**, & Hill, P.L. (2017). Purpose and cognitive

- functioning from middle to older adulthood: Findings from the MIDUS study. *Aging, Neuropsychology, and Cognition*, *24*, 662-671.
25. **Payne, B.R.**, Gross, A. L., Hill, P.L., Parisi, J., Rebok, G., & Stine-Morrow, E.A.L. (2017). Decomposing the relationship between cognitive ability and self-referent memory beliefs in older adulthood: What's memory got to do with it? *Aging, Neuropsychology, and Cognition*, *24*, 345-362.
 26. Stites, M.C., **Payne, B.R.**, & Federmeier, K.D. (2017). Getting ahead of yourself: Parafoveal word expectancy modulates the N400 during sentence reading. *Cognitive, Affective, and Behavioral Neuroscience*, *17*, 475-490.
 27. **Payne, B.R.**, Stites, M.C., & Federmeier, K.D. (2016). Out of the corner of my eye: Foveal semantic load modulates parafoveal processing in reading. *Journal of Experimental Psychology: Human Perception and Performance*, *26*, 1839-1857.²
 28. Liu, X., Chin, J., **Payne, B.R.**, Fu, W-T., Morrow, D., & Stine-Morrow, E.A.L. (2016). Adult age differences in information foraging in an interactive reading environment. *Psychology and Aging*, *31*, 211-223.
 29. **Payne, B.R.** & Stine-Morrow, E.A.L. (2016). Risk for mild cognitive impairment is associated with semantic integration deficits in sentence processing and memory. *The Journal of Gerontology: Psychological Sciences*, *71*, 243-253. ³
 30. Stine-Morrow, E.A.L. & **Payne, B.R.** (2016). Age differences in language segmentation. *Experimental Aging Research*, *42*, 107-125.⁴
 31. **Payne, B.R.**, Lee, C-L., & Federmeier, K.D. (2015). Revisiting the incremental effects of context on word processing: Evidence from single-word event-related brain potentials. *Psychophysiology*, *52*, 1456-1469.
 32. Chin, J., **Payne, B.R.**, Gao, X., Stine-Morrow, E.A.L., Morrow, D.G., Conner-Garcia, T., Graulich, J.F., & Murray, M.D. (2015). Knowledge influences comprehension and memory for health information among older adults: Distinguishing domain-general and domain-specific knowledge effects. *Memory*, *23*, 577-589.
 33. Chin, J., **Payne, B.R.**, Fu, W.T., Morrow, D.G., & Stine-Morrow, E.A.L. (2015). Information foraging across the lifespan: Search and switch in unknown patches. *Topics in Cognitive Science*, *3*, 428-450.
 34. **Payne, B.R.**, Gross, A.L, Parisi, J.M., Sisco, S., Stine-Morrow, E.A.L., Marsiske, M., & Rebok, G.W. (2014). Modeling longitudinal changes in older adults' memory for spoken discourse: Findings from the ACTIVE cohort. *Memory*, *22*, 990-1001.
 35. Stine-Morrow, E.A.L., **Payne, B.R.**, Roberts, B.W., Kramer, A.F., Morrow, D.G., Payne, L., Hill, P.L., Jackson, J.J., Gao, X., Noh, S.R., Janke, M., & Parisi, J.M. (2014). Training versus engagement as paths to cognitive optimization with aging. *Psychology and Aging*, *29*, 891-906.

²2017 Early Career Award Paper: Society for Experimental Psychology and Cognitive Science (APA Division 3)

³Editors Choice

⁴Special issue on "Age, Hearing, and Speech Comprehension". A Festschrift in honor of Dr. Arthur Wingfield.

36. **Payne, B.R.** & Stine-Morrow, E.A.L. (2014). Age differences in wrap-up during sentence understanding: Evidence from ex-Gaussian distributional analyses of reading time. *Psychology and Aging, 29*, 213-228.
37. **Payne, B.R.**, Grison, S., Gao, X., Christianson, K., Morrow, D.G., & Stine-Morrow, E.A.L. (2014). Aging and individual differences in binding during sentence understanding: Evidence from temporary and global syntactic attachment ambiguities. *Cognition, 130*, 157-173.
38. Hill, P.L., **Payne, B.R.**, Jackson, J.J., Stine-Morrow, E.A.L. & Roberts, B.W. (2014). Perceived social support predicts increased conscientiousness during older adulthood. *The Journal of Gerontology: Psychological Sciences, 69*, 543-547.
39. **Payne, B.R.** & Stine-Morrow, E.A.L (2012). Aging, parafoveal preview, and semantic integration in sentence processing: Testing the cognitive workload of wrap-up. *Psychology and Aging, 27*, 638-649.
40. Jackson, J.J., Hill, P.L., **Payne, B.R.**, Roberts, B.W., & Stine-Morrow, E.A.L. (2012). Can an old dog learn (and want to experience) new tricks? Cognitive training changes openness in older adults. *Psychology and Aging, 27*, 286-292.
41. **Payne, B.R.**, Gao, X., Noh, S.R., Anderson, C.J., & Stine-Morrow, E.A.L. (2012). The effects of print exposure on sentence processing and memory among older adults: Evidence for efficiency and reserve. *Aging, Neuropsychology, and Cognition, 19*, 122-149.⁵
42. **Payne, B.R.**, Jackson, J.J, Hill, P.L., Gao, X., Roberts, B.W., & Stine-Morrow, E.A.L. (2012). Memory self-efficacy predicts responsiveness to inductive reasoning training in older adults. *The Journal of Gerontology: Psychological Sciences, 67*, 27-35.
43. **Payne, B.R.**, Jackson, J.J., Noh, S.R., & Stine-Morrow, E.A.L. (2011). In the zone: Flow state and cognition in older adults. *Psychology and Aging, 26*, 738-743.

Book Chapters

1. **Payne, B.R.**, Ng, S., Shantz, K., & Federmeier, K.D. (2020). Event-related brain potentials and multilingual language processing: The N's and P's. *Psychology of Learning and Motivation, 72*, 75- 118.
2. **Payne, B.R.** & Lohani, M. (2020). Personality and cognitive health in aging. In P.L. Hill and M. Allemand (eds.) *Personality and Healthy Aging: New Directions and Techniques*. Springer.
3. **Payne, B.R.** & Silcox, J*. (2019). Aging, context processing, and comprehension. *Psychology of Learning and Motivation, 71*, 215- 264.
4. **Payne, B.R.** & Hill, P.L. (2016). Experimental research methods in lifespan human development. In Bornstein M.H. (Ed.) *The SAGE Encyclopedia of Lifespan Human Development.*, SAGE Press.
5. Stine-Morrow, E. A. L. & **Payne, B.R.** (2015). Education and learning: Lifespan perspectives. In J. D. Wright (Ed.) *International Encyclopedia of the Social and Behavioral Sciences (Second edition)*, Oxford: Elsevier.

⁵Special issue on "Compensatory Mechanisms for Age-Related Cognitive Decline".

Published Conference Proceedings and White Papers

1. Levac, D.E., Taylor, M. **Payne, B.R.**, Ward, N. (2019). The influence of virtual environment complexity on motor learning in typically developing children and children with cerebral palsy. *IEEE Proceedings of the 13th International Conference on Virtual Rehabilitation*, eds. WG Wright, S Subramanian, G Fluet, M Agmon, RM Proffitt, M Roberts, 1-7.
2. **Payne, B.R.** (2018). Text captioning and speech understanding: A literature review. In *Federal Communications Commission Filing: Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*. Appendix B. 1-9.
3. Chin, J., **Payne, B.R.**, Battles, A., Fu, W.T., Morrow, D.G., & Stine-Morrow, E.A.L. (2012). Information foraging in unknown patches across the lifespan. in *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*, eds Miyake N., Peebles D., Cooper R. P., editors. (Sapporo: Cognitive Science Society), 1404–1409.

Pre-prints, under review, and in preparation

1. **Payne, B.R.**, Silcox, J.W., Crandell, H.A., Lash, A., Ferguson, S.H., & Lohani, M. (under revision). Text captioning buffers against the effects of background noise and hearing loss on memory for speech. *Ear and Hearing*. Preprint: <https://psyarxiv.com/59cq8/>
2. LoTemplio, S., Silcox, J.W., Federmeier, K.D., & **Payne, B.R.** (under revision). Inter- and intra-individual coupling between pupillary, electrophysiological, and behavioral responses in a visual oddball task. *Psychophysiology*.
3. Fennell, A.M., Bugos, J.A., **Payne, B.R.**, & Schotter, E.R. (under review). Musical training's benefit to working memory is specific to the phonological loop. *Psychonomic Bulletin and Review*.
4. Crandell, H.A., Silcox, J.W., & **Payne, B.R.** (in prep). The effects of captioning errors, background noise, and hearing loss on memory for text-captioned speech in younger and older adults.
5. Silcox, J.W., & **Payne, B.R.** (in prep). The costs and benefits of listening effort on context processing: A simultaneous behavioral, ERP, and pupillometry study.
6. **Payne, B.R.** & Federmeier, K.D. (in prep). It takes (your) time: Aging, volitional control, and intraindividual variability in context processing.

Selected Invited Talks and Symposia

1. Discussant. "Individual differences in syntactic processing." Authors: Ariel James & Duane Watson. *Cycle Linguist Webcast*. Link: <https://t.co/tYIG2yvr4K?amp=1>.
2. Symposium Co-Chair (with Dr. Liz Schotter). "Word processing across space and time during reading: Insights from eye tracking, electrophysiology, and computational modeling." *20th European Conference on Eye Movements*, Alicante, Spain. 2019.
3. *Non-invasive Neurostimulation Facility Open House*. University Neuropsychiatric Institute, University of Utah, Salt Lake City, Utah. 2018.

4. "Faces of the Future Symposium". *Annual Meeting of the Society for Psychophysiological Research*, Quebec City, Quebec, Canada, 2018.
5. GoogleX Tech Talk. *Google*. Mountain View, CA. 2018.
6. Symposium: "Developments in eye movement research on reading across the lifespan". *Annual Meeting of the Experimental Psychology Society*. Leicester, UK. 2018.
7. URPP Dynamics of Healthy Aging Workshop. *University of Zurich*. Zurich, Switzerland. 2018.
8. Symposium on "Personality and healthy aging". *European Conference on Personality*. Zadar, Croatia. 2018.
9. Cognitive and Brain Sciences, Department of Psychology. *Louisiana State University*. Baton Rouge, LA. 2016.
10. Department of Psychology and Cognitive Science Program. *University of North Carolina at Charlotte*. Charlotte, NC. 2016.
11. Cognition and Neural Sciences, Department of Psychology. *University of Utah*. Salt Lake City, UT. 2016.
12. Department of Psychology. *Old Dominion University*. Norfolk, Va. 2016.
13. Department of Psychological and Brain Sciences. *Washington University in St. Louis*. St Louis, MO. 2016.
14. Department of Psychology. *University of Birmingham*. Birmingham, UK. 2016.
15. Educational Neuroscience, Department of Educational Psychology. *University of Alabama*. Tuscaloosa, AL. 2016.
16. The Department of Psychology, *University of Illinois*. Urbana, IL. 2015.
17. Beckman Institute External Review of Biological Intelligence and Human-Computer Intelligent Interaction. *University of Illinois*. Urbana, IL. 2015.
18. Cognitive Neuroscience, Department of Psychology. *University of Illinois*. Urbana, IL. 2015.
19. Illinois Learning Sciences Design Laboratory Data Blitz. *University of Illinois*. Urbana, IL. <https://www.youtube.com/watch?v=mLM3VChCsos>. 2015.
20. Department of Psychology and Cognitive Science Program. *University of Richmond*. Richmond, VA. 2014.
21. WingfieldFest: A Festschrift in honor of Arthur Wingfield. Volen Center for Complex Systems. *Brandeis University*. Waltham, MA. 2014.

Selected Presentations and Abstracts

*Student researcher

1. Silcox, J.*, Mickey, B., & **Payne, B.R.** (2020, upcoming). Disruption of left inferior frontal cortex eliminates the word predictability benefit in memory: An event-related rTMS study. *Society for the Neurobiology of Language*. Virtual conference.

2. Crandell, H.* , Silcox, J.* & **Payne, B.R.** (2020, upcoming). The effects of captioning errors, background noise, and hearing loss on memory for text-captioned speech in younger and older adults. *Annual Meeting of the Psychonomic Society*. Virtual conference.
3. LoTempio, S.* , Silcox, J.* Federmeier, K.D., & **Payne, B.R.** (2020). Distinct pupillary and neural responses to semantic and syntactic violations in sentence processing. *Annual Meeting of the Society for Psychophysiological Research*. Virtual conference.
4. Silcox, J.* & **Payne, B.R.** (2020). The costs and benefits of listening effort in context processing: A study utilizing behavioral, electrophysiological and pupillometry measures. *Annual Meeting of the Society for Psychophysiological Research*. Virtual conference.
5. Lopes, C.* , Silcox, J.* , & **Payne, B.R.** (2020). What self-paced reading times and ERPs reveal about the role of volitional control in predictive processes during reading. *Annual Meeting of the Society for Psychophysiological Research*. Virtual conference.
6. Fennell, A. M.* , Bugos, J. A., **Payne, B. R.**, & Schotter, E. R., (2020). Musical training's benefit to working memory is specific to the phonological loop. *Virtual Working Memory Symposium*. Virtual conference.
7. Silcox, J.* , Lopes, C.L.* , Mickey, B., & **Payne, B.R.**. (2019). The role of the left inferior frontal cortex in memory for predictable and unpredictable words: An event-related rTMS study. *Snowbird Neuroscience Symposium*. Snowbird, Utah. *Note: Won first place in best poster award.*
8. LoTempio, S.* , Silcox, J.* , Federmeier, K.D., & **Payne, B.R.**. (2019). A test of coupling between electrophysiological and pupillary responses in a visual oddball task. *Snowbird Neuroscience Symposium*. Snowbird, Utah.
9. LoTempio, S.* , Scott., E.* , Hopman, R.J.* , McDonnel, A.* , McKinney, T.* , **Payne, B.R.**, & Strayer, D. (2019). Nature as a potential moderator of the error-related negativity. *The SHIFT Conference: Nature as Medicine*. Jackson Hole, Wyoming.
10. LoTempio, S.* , Silcox, J.* , Federmeier, K.D., & **Payne, B.R.**. (2019). Simultaneous EEG-pupillometry reveals coupling between electrophysiological and pupillary responses in a visual oddball task. *Annual Meeting of the Society for Psychophysiological Research*. Washington, D.C.
11. Finlay, W.* , Silcox, J.* , & **Payne, B.R.** (2019). The role of left inferior frontal gyrus in memory for predictable and unpredictable words: An event-related transcranial magnetic stimulation study. *University of Utah Undergraduate Research Symposium*. Salt Lake City, Utah.
12. Srivastava, V.* & **Payne, B.R.** (2019). The effects of text captioning on non-native English speakers immediate recall and delayed recognition of speech. *University of Utah Undergraduate Research Symposium*. Salt Lake City, Utah.
13. LoTempio, S.* , Federmeier, K.D., & **Payne, B.R.** (2018). Co-registration of pupillary and electrophysiological responses in a visual oddball task. *Annual Meeting of the Psychonomic Society*. New Orleans, LA.
14. **Payne, B.R.**, Silcox, J.* , Lash, A., Ferguson, S.H., & Lohani, M. (2018). Text captioning reduces the effects of perceptual effort on speech memory. *Annual Meeting of the Psychonomic Society*. New Orleans, LA.

15. **Payne, B.R.**, Silcox, J.*, Lash, A., Ferguson, S.H., & Lohani, M. (2018). Assistive text captioning offsets the effects of background noise on speech memory and pupillometry. *Academy of Rehabilitative Audiology Institute*. Pittsburgh, PA.
16. Chandler, M.C.*, McGowan, A.L., Wray, A.H., **Payne, B.R.**, Pontifex, M.B. (2018). The relationship between aerobic fitness and neuroelectric indices of reading in college-aged adults. *Annual Meeting of the Society for Psychophysiological Research*.. Quebec City, Quebec, Canada.
17. Ostlund, B.D.*, Williams, L.H.*, **Payne, B.R.**, Conradt, E., Crowell, S.E., & Drew, T. (2018). The adaptive influence of pregnancy-specific anxiety on infant neurophysiology. *Cognitive Science Association for Interdisciplinary Learning*. Hood River, Oregon.
18. **Payne, B.R.** & Federmeier, K.D. (2018). Semantic activation and integration across parafoveal and foveal vision during sentence reading: Evidence from event-related brain potentials. *CUNY Conference on Human Sentence Processing*, Davis, CA.
19. **Payne, B.R.** & Federmeier, K.D. (2017). Take your time: Aging, volitional control, and intraindividual variability in context processing in sentence comprehension. *Annual Meeting of the Society for Psychophysiological Research*. Vienna, Austria.
20. Ng, S., **Payne, B.R.**, Federmeier, K.D., & Stine-Morrow, E.A.L. (2017). How do low literacy adults read and how much do they retain? A reading-time and recall study. *Annual Meeting of the Association for Psychological Science*. Boston, MA.
21. Gross A.L., **Payne, B.R.**, Casanova, R., Dvoudzadeh, P., Dzierzewski, J., Farias, S., Giovannetti, T., Ip, E., Marsiske, M., Rebok, G., Schaie, W., Thomas, K., Willis, S., Jones, K. (2017). Moving Theory to Practice—Hands-On Approaches to Cognitive Remediation in Older Adults. *Annual Meeting of the American Psychological Association*. Washington, DC.
22. **Payne, B.R.** & Federmeier, K.D. (2017). Age-related changes in incremental semantic processing: Evidence from single-word ERPs. *Annual Meeting of the Cognitive Neuroscience Society*. San Francisco, CA.
23. Hill, P.L., Lewis, N.A., **Payne, B.R.**, & Turiano, N.A. (2016). Sense of purpose predicts level and change in subjective memory beliefs: Findings from the MIDUS cohort. *Annual Meeting of the Gerontological Society of America*. Boston, MA.
24. **Payne, B.R.** & Federmeier, K.D. (2016). As far as the eye can see: Event-related brain potentials reveal dynamics of visuospatial attention allocation during reading. *56th Annual Meeting of the Society for Psychophysiological Research*. Minneapolis, MN.
25. **Payne, B.R.** & Federmeier, K.D. (2016). Co-registration of event-related single-trial EEG and reading time reveal intraindividual variability in context use in language processing. *Annual Meeting of the Cognitive Neuroscience Society*. New York City, New York.
26. **Payne, B.R.** & Federmeier, K.D. (2016). Event-related brain potentials reveal age-related changes in the recruitment of parafoveal visual attention in reading. *The Cognitive Aging Conference*. Atlanta, GA.
27. Steen, A., Ng, S., **Payne, B.R.**, Federmeier, K.D., & Stine-Morrow, E.A.L. (2016). The effects of age and literacy skill on eye-movement control during lexical ambiguity resolution. *The Cognitive Aging Conference*. Atlanta, GA.

28. Ng, S., **Payne, B.R.**, Stine-Morrow, E.A.L. & Federmeier, K.D. (2016). Literacy skill modulates age differences in the use of context in language processing: Evidence from ERPs. *The Cognitive Aging Conference*. Atlanta, GA.
29. **Payne, B.R.** & Stine-Morrow, E.A.L. (2016). Mild cognitive impairment and semantic integration in language processing. *CLEAR Initiative: Cognition, Lifespan Engagement, Aging, and Resilience*. Beckman Institute, Urbana, IL.
30. **Payne, B.R.** & Federmeier, K.D. (2015). Multiple effects of sentential context on lexical processing: Evidence from single-item event-related brain potentials. *Annual Meeting of the Psychonomic Society*. Chicago, IL.
31. **Payne, B.R.** & Federmeier, K.D. (2015). Risky readers? Event-related brain potentials reveal age-related changes in the recruitment of parafoveal visual attention in reading. *Society for the Neurobiology of Language*. Chicago, IL.
32. **Payne, B.R.** & Federmeier, K.D. (2015). Pace yourself: Intraindividual variability in context use revealed by self-paced event-related brain potentials. *55th Annual Meeting of the Society for Psychophysiological Research*. Seattle, WA.
33. Steen, A., Ng, S., **Payne, B.R.**, Federmeier, K.D., & Stine-Morrow, E.A.L. (2015). Use of contextual constraint among adult readers varying in age and literacy skill. *Annual Meeting of the American Psychological Association*. Toronto, ON, Canada.
34. Gross A.L., **Payne, B.R.**, Casanova, R., Dvoudzadeh, P., Dzierzewski, J., Farias, S., Giovannetti, T., Ip, E., Marsiske, M., Rebok, G., Schaie, W., Thomas, K., Willis, S., Jones, K. (2015). The ACTIVE conceptual diagram as a structural equation model. *Annual Meeting of the Gerontological Society of America*. Orlando, FL.
35. **Payne, B.R.**, Stites, M.C., & Federmeier, K.D. (2015). Out of the corner of my eye: Event-related potentials reveal effects of foveal load on parafoveal word processing during reading. *Annual Meeting of the Cognitive Neuroscience Society*. San Francisco, CA.
36. Stites, M.C., **Payne, B.R.**, & Federmeier, K.D. (2015). Getting ahead of yourself: Parafoveal word expectancy modulates the N400 during sentence reading. *Annual Meeting of the Cognitive Neuroscience Society*. San Francisco, CA.
37. Lewis, N., Turiano, N., **Payne, B.R.**, & Hill, P. (2014). Purpose and cognitive functioning from middle to older adulthood. *67th Annual Meeting of the Gerontological Society of America*. Washington, DC.
38. **Payne, B.R.** & Stine-Morrow, E.A.L. (2014). RT distributional analyses of age differences in wrap-up during sentence comprehension. *The Cognitive Aging Conference*. Atlanta, GA.
39. **Payne, B.R.** & Stine-Morrow, E.A.L. (2014). The iTrain project: Effects of home-based verbal working memory training on language comprehension in older adults. *The Cognitive Aging Conference*. Atlanta, GA.
40. Chin, J., **Payne, B.R.**, Fu, W-T, Morrow, D.G., Stine-Morrow, E.A.L. (2014). Information foraging across the lifespan: Search and switch in unknown patches. *The Cognitive Aging Conference*, Atlanta, GA.
41. **Payne, B.R.**, James, A., Stine-Morrow, E.A.L., & Watson, D. (2014). Eye movements during reading reflect subsequent sentence memory: Evidence from subject and object relative

- clauses. *CUNY Conference on Human Sentence Processing*, Columbus, OH.
42. Stine-Morrow, E.A.L., **Payne, B.R.**, & Giffin, L. (2013). *Everyday engagement as a source of cognitive vitality? Lessons learned from the Senior Odyssey Project*. In (Chairs), Plasticity and Real-Life Interventions. Symposium presented at the 66th annual meeting of the Gerontological Society of America. Orlando, FL.
 43. **Payne, B.R.** (2013). *Publishing in experimental psychology: A graduate student's perspective*. In D. Morrow, F. Durso, & Brewer, N. (Chairs). How to publish papers that matter. Symposium presented at the annual meeting of the American Psychological Association. Honolulu, HI.
 44. Giffin, L., **Payne, B.R.**, & Stine-Morrow, E.A.L. (2013). Dispositional flow: A resource for successful aging. *The 66th Annual Meeting of the Gerontological Society of America*, New Orleans, LA.
 45. **Payne, B.R.**, Hill, P.L., Gross, A.L., Parisi, J.M., Rebok, G.W., & Stine-Morrow, E.A.L. (2013). Bifactor modeling of subjective memory beliefs and cognitive function in older adulthood: What's memory got to do with it? *The 121st Annual Meeting of the American Psychological Association*, Honolulu, HI.
 46. **Payne, B.R.** & Stine-Morrow, E.A.L. (2012). Aging and parafoveal word processing at clause and sentence boundaries: An eye-movement study. *The 2012 Cognitive Aging Conference*, Atlanta, GA.
 47. Chin, J., **Payne, B.R.**, Morrow, D., Stine-Morrow, E.A.L., Gao, X., Conner-Garcia, T., Graulich, J., & Murray, M. (2012). Effects of domain: General and health knowledge effects on sentence processing and recall among older adults. *The 2012 Cognitive Aging Conference*, Atlanta, GA.
 48. Gao, X., Grison, S., **Payne, B.R.**, Christianson, K., Morrow, D.G., & Stine-Morrow, E.A.L. (2012). Aging and text integration across sentence boundaries: An eye-movement study. *The 2012 Cognitive Aging Conference*, Atlanta, GA.
 49. Chin, J., **Payne, B.R.**, Battles, A., Fu, W., Morrow, D.G., & Stine-Morrow, E.A.L. (2012). Age differences in information foraging: Search and switch in word search puzzles. *The 2012 Cognitive Aging Conference*, Atlanta, GA.
 50. Grison, S., **Payne, B.R.**, Christianson, K., Morrow, D.G., & Stine-Morrow E.A.L. (2012). Aging and under-specification of syntactic ambiguity resolution. *The 2012 Cognitive Aging Conference*, Atlanta, GA.
 51. **Payne, B.R.** (2012). Language experience moderates sentence comprehension in adulthood. *HABITS Initiative: Health, Attitudes, Biology, Information, Technology, Society*, Urbana, IL.
 52. **Payne, B.R.**, Hill, P.L., & Stine-Morrow, E.A.L. (2012). *Memory self-efficacy and cognitive plasticity in the context of cognitive interventions: Findings from Senior Odyssey and ACTIVE*. In J. Berry & R. West (Chairs), Theoretical and empirical advances in memory self-efficacy research. Annual meeting of the American Psychological Association. Orlando, FL.
 53. **Payne, B.R.** (2012). *Memory beliefs and cognitive training interventions in the elderly*. In N. Sciolino & E. Pavlova (Chairs), American Psychological Association Convention's 6th Annual

Science DataBlitz Presentation. Annual meeting of the American Psychological Association. Orlando, FL. ⁶

54. Stine-Morrow, E. A. L., **Payne, B. R.**, Gao, X., Chui, H., Jackson, J., & Hill, P. (2011). *Engagement as an organizing principle for cognitive resilience*. In P. Hartman-Stein (Chair), Innovative interventions for cognitive enhancement. Symposium presented at the annual meeting of the American Psychological Association. Washington, DC.
55. **Payne, B.R.**, Jackson, J.J., Hill, P.L., Gao, X., Roberts, B.W. & Stine-Morrow, E.A.L. (2011). Memory self-efficacy predicts responsiveness to inductive reasoning training in older adults. *The 64th meeting of the Gerontological Society of America*, Boston, MA.
56. Chui, H., Gao, X., **Payne, B.R.**, Hill, P., Jackson, J.J., Kramer, A.F., & Stine-Morrow, E.A.L. (2011). Social support moderates the effect of attentional inconsistency on fluid ability in older adults. *The 119th annual convention of the American Psychological Association*, Washington, DC.
57. **Payne, B.R.** (2011). Memory beliefs in older adulthood: Individual differences in non-target cognitive training outcomes. *The Lifelong Brain and Cognition Proseminar*, Urbana, IL.
58. **Payne, B.R.** (2011). Cognitive reserve in language processing across the lifespan: The role of print exposure. *The Beckman Institute Innovation Summit on Educational Neuroscience: Minds, Brains, and New Literacies*, Urbana, IL.
59. **Payne, B.R.** (2010). Cognitive plasticity in older adulthood: The role of self-efficacy beliefs in cognitive training. *The Cognitive Science of Teaching and Learning Proseminar*, Urbana, IL.
60. Gao, X., **Payne, B.R.**, & Stine-Morrow, E.A.L. (2010). Memory self-efficacy predicts longitudinal changes in resource allocation and text memory in reading. *The Gerontologist*, 50, 149.
61. **Payne, B.R.**, Gao, X., & Stine-Morrow, E.A.L. (2010). Measures of reading skill dissociate online language processes among older adults. *The Gerontologist*, 50, 148.
62. Jackson, J.J, Hill, P.L., **Payne, B.R.**, Roberts, B.W., & Stine-Morrow, E.A.L. (2010). Can an old dog learn (and want to experience) new tricks? Cognitive training increases openness in older adults. *The 15th annual European Conference on Personality*, Brno, Czech Republic.
63. **Payne, B.R.**, Noh, S.R., & Stine-Morrow, E.A.L. (2010). In the zone: Flow and cognition in older adults. *The 2010 Cognitive Aging Conference*, Atlanta, GA.
64. Noh, S.R., Shake, M.C., **Payne, B.R.**, & Stine-Morrow, E.A.L. (2010). Age differences in the detection of textbase or situational inconsistency during narrative comprehension: An eye movement study. *The 2010 Cognitive Aging Conference*, Atlanta, GA.
65. **Payne, B.R.** (2009). Cognition and activity engagement in adulthood. *The Cognitive Science of Teaching and Learning Proseminar*, Urbana, IL.
66. **Payne, B.R.**, Smiler, A.P., & O'Brien, C. (2009). You are what you watch: Identity and media usage. *The 117th annual convention of the American Psychological Association*, Toronto, ON, Canada.

⁶One of 15 nominated speakers. Representing division 20- Adult Development and Aging.

67. **Payne, B.R.** (2008). Investigating the occurrence of change deafness and inattentional deafness in musical auditory scenes. *The Cornell University Sigma Xi Conference*, Ithaca, NY.

Editorial Service

Editorial Board

Psychology and Aging, Consulting Editor (2018 -)

Ad Hoc Journal Review

Aging, Neuropsychology, and Cognition; Applied Psycholinguistics; Attention Perception and Psychophysics; Brain and Cognition; Brain Imaging and Behavior; Brain & Language; Clinical Interventions in Aging Research; Cognition; Cortex; Cognitive Science; Cognitive Neuropsychology; Developmental Psychology; The Gerontologist; The International Journal of Aging and Human Development; The Journal of Adolescent Health, Medicine, and Therapeutics; Journal of Experimental Psychology: Human Perception and Performance; Journal of Experimental Psychology: Learning, Memory, and Cognition; Journal of Memory and Language; The Journals of Gerontology: Psychological Science; Journal of Speech, Language, and Hearing Research; Journal of Research in Reading; Laboratory Phonology; Language, Cognition, and Neuroscience; Language Learning; Memory; Neurobiology of Aging; NeuroImage; NeuroImage: Clinical; Neuropsychologia; Neuroscience Letters; PLOS ONE; Proceedings of the National Academy of Sciences; Psychophysiology; Psychology and Aging; Quarterly Journal of Experimental Psychology; Scientific Reports; Trends in Cognitive Science.

Teaching Experience and Mentorship

Courses

Advanced Cognitive Electrophysiology. PSY 5150/6150. Co-creator (2019) and Instructor of Record (2020). (with Trafton Drew and Matt Euler) University of Utah.

Cognitive Neuropsychology. PSYC 3140. Instructor of Record. University of Utah. (2018 (x2), 2019)

Introduction to Quantitative Methods. PSY 5499/6499. Instructor of Record. University of Utah (2019).

Cognitive Neuroscience: Applications to Research. PSY 6140. University of Utah (2018)

Applied Hierarchical Linear Modeling with Lab. EPSY 590. University of Illinois (2013).

Educational Workshops

Workshop on Human Electrophysiology. Webinar Course. **Society for Psychophysiological Research.** <https://sprweb.org/events/EventDetails.aspx?id=1221567> . Co-Instructor with Dr. Kara Federmeier.

Linear Mixed-Effects Modeling of Electrophysiological Data. Summer Methods Workshop. University of Illinois (2016).

Student Supervision

Graduate Mentorship

Jack Silcox, Graduate student, Cognition and Neural Science. University of Utah (2018 -)

Sara LoTempio, Graduate student, Cognition and Neural Science. University of Utah (co-advisor) (2018)

Clara Lopes, Graduate student, Cognition and Neural Science. University of Utah (2019 -)

Ryan Murdock, Graduate student, Cognition and Neural Science. University of Utah (2020 -)
2019 - 2021. *Doctor of Audiology (Au.D) Capstone Research Mentor.* Department of Communication Sciences and Disorders. University of Utah

Brittany Carpenter: “Effects of acoustic clarity on eye movements during reading of text captioned speech”

Nicole Parente: “Web-based cloze norming and plausibility ratings via Amazon Mechanical Turk”

Undergraduate Mentorship

Haily Latimer, Human Factors Certificate, University of Utah (2020)

Mariah Erickson, UROP Program, Psychology. University of Utah (2020)

Brett Smith, UROP Program, Psychology. University of Utah (2019)

Elisabeth Antley, Psychology Honors Program (2019 - present)

Jordan Anderson, Psychology (Research Assistant) (2019 - present)

Billy Finlay, SPUR Program. Linguistics. University of Utah (2019)

Vanessa Srivastava, Honors and UROP Program, Psychology. University of Utah (2018-19)

Jessica Stoker, Psychology (Research Assistant) (2018- present)

Wardah Ishak, Psychology (Research Assistant) (2018)

Hannah Crandell, Psychology (Research Assistant and Lab Manager) (2018 - present)

Irene Kim, Psychology (Research Assistant) (2018)

Melissa Coeffel, Honors Program. Behavioral Neuroscience. University of Illinois (2016-2017)

Thesis, Prelim Exam, and Dissertation Committees

Committee Chair*

Sara LoTempio, M.S. (Cognition and Neural Science, Utah)

Ty McKinney, M.S. (Cognition and Neural Science, Utah)

Rachel Hopman, PhD. (Cognition and Neural Science, Utah)

Spencer Castro, PhD. (Cognition and Neural Science, Utah)

Ascher Munion, (Cognition and Neural Science, Utah)

Keith Jones, M.S., (Neuroscience, Utah)

Jack Silcox, M.S., (Cognition and Neural Science, Utah)*
Emily Scott, M.S. & PhD (Cognition and Neural Science, Utah)
Holly Gagnon, M.S. (Cognition and Neural Science, Utah)
Amy McDonnell, M.S. (Cognition and Neural Science, Utah)

Professional Service

University Service

2019. *Faculty Search Committee*. Department of Psychology, University of Utah
2019. *Faculty Search Committee*. Department of Communication Sciences and Disorders, University of Utah
2019. *Graduate Committee*. Department of Psychology, University of Utah
2018. *Graduate Committee*. Department of Psychology, University of Utah
2017. *Faculty Search Committee*. Department of Neurobiology and Neuroanatomy, University of Utah
2017. *Graduate Committee*. Department of Psychology, University of Utah
2016. *Beckman Institute Initiative*. The Illinois Language and Literacy Initiative (ILLI) and The Cognition Lifespan Engagement and Resilience (CLEAR) Initiative. University of Illinois at Urbana-Champaign
2014. *Faculty Search Committee*. Cognitive Science of Learning Search Committee. University of Illinois at Urbana-Champaign
2013. *Co-organizer* NIH Sponsored Language Processing Seminar Series. Beckman Institute for Advanced Science and Technology. University of Illinois at Urbana-Champaign
2013. *Fellowship Search Committee* (2013). Paul D. Doolen Fellow for Research in the Study of Aging. University of Illinois System (Urbana-Champaign, Chicago, & Springfield)
- 2011-2015. *Community Outreach and Science Education*. Beckman Institute Open House

Other Service

2019. *Graduate Poster Judge*. Annual Meeting of the Society for Psychophysiological Research
- 2018 - 2019. *National Science Foundation Reviewer*
- 2017 - 2020. *Education and Training Committee*. Society for Psychophysiological Research

Tools and Scale Development

The AFSS (Activity Flow State Scale) (with Elizabeth A.L. Stine-Morrow, Soo Rim Noh, and Joshua Jackson). Available from PsycTESTS. doi: 10.1037/t06855-000

The iTrain Working Memory App for iPad (with Elizabeth A.L. Stine-Morrow & Thomas Deegan). Source Code available at: <https://github.com/TALL1532/itrain>

In The News

ImpactStory Summary: <https://impactstory.org/u/0000-0001-6732-6599/>

Article Hyperlinks available at brennanpayne.com

Word Economic Forum. “What is cognitive reserve, and how do we increase it?”

CNN. “Study: Challenging seniors brains can also change their personality”

Science Daily. “Enhancing cognition in older adults also changes personality”

BI Annual Report. “Read between the lines”

Elderbranch. Interview: “Memory for language in older adulthood”

Futurity. “Brainy tasks keep seniors mentally fit”

Illinois News Bureau. “Doolen scholarships awarded to continue studies in gerontology”

BI News. “Power of positive thinking in older adulthood”