

Charles P. Davis, PhD

website: charlespdavis.com | Twitter: [@CPDavis90](https://twitter.com/CPDavis90)

Department of Psychology
Department of Neurosurgery
Yale University
100 College Street, New Haven CT, 06510
charles.davis@uconn.edu

Summary

I am a cognitive neuroscientist interested in the cognitive and neural bases of semantic memory and its relation to language. Broadly, how do we know what things mean, how does the brain give rise to those meanings, how is meaning reflected in language structure, and how does language help us to organize semantic knowledge? I use a range of behavioral, computational, neuroimaging, and corpus techniques to answer these questions.

Academic Positions

Postdoctoral Researcher, *Yale University*, New Haven, CT, USA

Starting Fall 2021

Education

PhD, Psychological Science, *University of Connecticut*, Storrs, CT, USA 2021
Advisor: Eiling Yee; Committee: Gerry Altmann, James Magnuson, Marie Coppola

MS, Psychological Science, *University of Connecticut*, Storrs, CT, USA 2018
Advisor: Eiling Yee; Committee: Gerry Altmann, James Magnuson, Marie Coppola

Honours BA, Psychology, *Brock University*, St. Catharines, ON, Canada 2013
First-Class Standing; Minor: Philosophy; Concentration in German

Publications

- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2021). Encoding and inhibition of arbitrary episodic context with abstract concepts. *Memory & Cognition*. [doi:10.3758/s13421-021-01212-y](https://doi.org/10.3758/s13421-021-01212-y)
- Davis, C. P.** & Yee, E. (2021). Building semantic memory from distributional language and embodied experience. *WIREs Cognitive Science*. [doi:10.1002/wcs.1555](https://doi.org/10.1002/wcs.1555)
- Ekves, Z., Prystauka, Y., **Davis, C. P.**, Yee, E., & Altmann, G. T. M. (2021). Psychology of cleansing through the prism of intersecting object histories. *Behavioral and Brain Sciences*. [doi:10.1017/S0140525X20000552](https://doi.org/10.1017/S0140525X20000552)
- Davis, C. P.**, Yee, E., & Eigsti, I. M. (accepted). Beyond the social domain: Autism-spectrum traits and the embodiment of manipulable object concepts. To appear in S. L. Macrine & J. Fugate (Eds.), *Movement matters: How embodied cognition informs teaching and learning*. MIT Press.
- Davis, C. P.**, Joergensen, G., Boddy, P., Dowling, C., & Yee, E. (2020). Making it harder to “see” meaning: The more you see something, the more its conceptual representation is susceptible to visual interference. *Psychological Science*. [doi:10.1177/0956797620910748](https://doi.org/10.1177/0956797620910748)
- Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A. Huber, J., ... **Davis, C. P.**, ... Poldrack, R., & Schonberg, T. (2020). Variability in the analysis of a single neuroimaging dataset by many groups. *Nature*. [doi:10.1038/s41586-020-2314-9](https://doi.org/10.1038/s41586-020-2314-9)
- Davis, C. P.**, Altmann, G. T. M., & Yee, E. (2020). Situational systematicity: A role for schema in understanding the differences between abstract and concrete concepts. *Cognitive Neuropsychology*. [doi:10.1080/02643294.2019.1710124](https://doi.org/10.1080/02643294.2019.1710124)
- Davis, C. P.**, Altmann, G. T. M., & Yee, E. (2020). Language as a mental travel guide. *Behavioral and Brain Sciences*, 43, E125. [doi:10.1017/S0140525X19003182](https://doi.org/10.1017/S0140525X19003182)
- Davis, C. P.**, Morrow, H. M., De Luca, M., & Lupyan, G. (2020). [The generality and origins of form-to-meaning iconicity](#). In Ravnani, A., Barbieri, C., Martins, M., Flaherty, M., Jadoul, Y., Lattenkamp, E., Little, H.,

Mudd, K. & Verhoef, T. (Eds.): *The Evolution of Language: Proceedings of the 13th International Conference (EvoLang13)*.

- Davis, C. P.**, Morrow, H. M., & Lupyan, G. (2019). What does a horgous look like? Nonsense words elicit meaningful drawings. *Cognitive Science*. doi:10.1111/cogs.12791
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2019). Compounding matters: The P100 as an index of semantic access to compound words. *Cognition*. doi:10.1016/j.cognition.2018.12.006
- Davis, C. P.**, & Yee, E. (2019). Features, labels, space, and time: Factors supporting taxonomic relationships in the anterior temporal lobe and thematic relationships in the angular gyrus. *Language, Cognition and Neuroscience*. doi:10.1080/23273798.2018.1479530
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019). [Abstract concepts and the suppression of arbitrary episodic context](#). In A. K. Goel, C. M. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (p. 1592–1598). Montreal, QC: Cognitive Science Society.

Under Review and in Preparation

- Davis, C. P.**, Eigsti, I. M., Healy, R., Joergensen, G. H., & Yee, E. (2020; preprint). Autism-spectrum traits predict the embodiment of manipulation knowledge about object concepts: Evidence from eye tracking. doi:10.31234/osf.io/k4ubf
- Davis, C. P.** & Yee, E. (in prep). Time as an embodied property of concepts.
- Davis, C. P.**, Joergensen, G. H., & Yee, E. (in prep). Low-level auditory interference does not disrupt processing of auditorily experienced concepts.

Invited Talks and Workshops

- Integrative semantic memory*. (2021). Turk-Browne Lab Meeting. Yale University.
- The “cons” of using fMRI to understand cognition: Replicability and other obstacles*. Invited as part of a debate: *Using fMRI for cognitive research*. (2021). University of Connecticut Neurobiology of Language January Term Primer.
- Data visualization in R with ggplot2*. (2018). University of Connecticut Neurobiology of Language January Term Primer.

Posters and Presentations

- Davis, C. P.**, Lautz, N., & Yee, E. (2021, March). A graded role for the visual system in perceptual simulation during language processing? Poster presented at the 28th Annual Meeting of the Cognitive Neuroscience Society. Remote conference.
- Davis, C. P.** & Lupyan, G. (2020, July). The iconicity of random words. Presented at the 42nd Annual Meeting of the Cognitive Science Society. Remote conference.
- Davis, C. P.**, Morrow, H. M., De Luca, M., & Lupyan, G. (2020, April). The generality and origins of form-to-meaning iconicity. Accepted at the 13th International Conference on the Evolution of Language, Brussels, Belgium. [Conference cancelled due to COVID-19 outbreak.]
- Heffner, C. C., **Davis, C. P.**, & Myers, E. B. (2019, August). Behavioral and neural correlates of phonetic plasticity. Presented at the 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland.
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019, July). Abstract concepts and the suppression of arbitrary episodic context. Presented at the 41st Annual Meeting of the Cognitive Science Society, Montreal, QC, Canada.
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019, March). Is arbitrary episodic context suppressed in abstract concepts? Presented at the 26th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Healy, R., Serino, J., **Davis, C. P.**, Joergensen, G., & Yee, E. (2018, March). Understanding “thunder” is more difficult than “rainbow” when performing an auditory task. Presented at the 25th Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2018, March). Encoding of episodic context in abstract and concrete concepts. Presented at the 25th Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.
- Davis, C. P.**, Joergensen, G., & Yee, E. (2017, November). Silence! An auditory task disrupts processing of auditorily experienced concepts. Presented at the 58th Annual Meeting of the Psychonomic Society, Vancouver, BC, Canada.
- Davis, C. P.**, Joergensen, G., Boddy, P., Dowling, C., & Yee, E. (2017, November). Get your head out of the clouds: Performing a visual task makes it harder to think about art than music. Presented at the 25th Annual Workshop on Object Perception, Attention, and Memory, Vancouver, BC, Canada.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2017, March). Why not both? Form and meaning affect early visual processing of compound words. Presented at the 30th Annual CUNY Conference on Human Sentence Processing, Cambridge, MA.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2016, November). Word concreteness and the processing of compound words. Presented at the 57th Annual Meeting of the Psychonomic Society, Boston, MA.
- Libben, G., **Davis, C. P.**, & Segalowitz, S. J. (2016, February). *Compound words, semantic transparency, and metaphors for morphological representations in the brain*. Presented at International Morphology Meeting 17, Vienna, Austria.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2014). Compounding matters: The P1 as an index of semantic access to compound words. *Psychophysiology*, 51(Suppl 1), S34.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2014, September). *Morphological transcendence: Morphemic boundary ambiguity produces conflict at the N4*. Presented at the 9th International Meeting on the Mental Lexicon, Niagara-on-the-Lake, ON, Canada.
- Davis, C. P.**, Libben, G. & Segalowitz, S. J. (2014, September). *Compounding matters: The P1 as an index of semantic access to compound words*. Presented at the 9th International Meeting on the Mental Lexicon, Niagara-on-the-Lake, ON, Canada.
- Martini, T. S., Capuana, L., Blank, C., **Davis, C. P.**, & Judges, R. (2014, January). *Psychology undergraduates' understanding of skill-based learning outcomes*. Presented at the Annual Meeting of the National Institute for the Teaching of Psychology, Tampa, FL.
- Davis, C. P.** (2012). *Predicting homosexuality from digit ratios (2D:4D), handedness, and fraternal birth order: A multivariate analysis in men and women*. Undergraduate Honours Thesis, Brock University, St. Catharines, ON, Canada.

Teaching Experience

Instructor of Record

University of Connecticut
Psychology of Language

2021

Lab Instructor

University of Connecticut
Research in Psychology
Introductory Psychology

2019–Present
2015–17

Brock University

Statistics and Research Design in the Behavioural Sciences
Introduction to Psychology

2010–12
2012–13

Guest Lecturer

University of Connecticut
Foundations of Cognitive Science (Neuroscience; Connectionism)
Psychology of Language (Semantic Memory)

2021
2015–16

Eastern Connecticut State University

Physiological Psychology (Semantic Memory)

2018

Teaching Assistant

University of Connecticut

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| Foundations of Cognitive Science | 2021 |
| Cognitive Psychology | 2020 |
| Graduate Statistics: Research Foundations | 2019–2020 |
| Psychology of Language | 2015–16 |

Brock University

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| Psychology Students' Transition to Work | 2014–15 |
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Applied Experience

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| CT Institute for the Brain and Cognitive Sciences/Brain Imaging Research Center Research Assistant in Neuroimaging | 2017–19 |
| Cactus Communications Academic Editor: Second-Language English Editing; Publication Support | 2013–19 |
| Introduction to Psychology: Gateways to Mind and Behavior (Mitterer and Coon, 2014) Copyeditor | 2013–14 |
| Ontario Brain Injury Association Research and Data Analysis Specialist (summer co-op position) | 2011 |

Awards and Distinctions

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| University of Connecticut Doctoral Dissertation Fellowship | 2020 |
| NSF-IGERT Innovation Grant: <i>Learning a phonologically engineered embodied language system</i> | 2019 |
| CT Institute for the Brain and Cognitive Sciences IBRAiN Fellowship in Neuroimaging | 2017–19 |
| NSF-IGERT Innovation Grant: <i>The role of language in two systems for category learning</i> | 2018 |
| CT Institute for the Brain and Cognitive Sciences Summer Graduate Fellowship | 2016–17 |
| NSERC Ontario Graduate Scholarship (declined offer) | 2015 |
| NSERC Canada Graduate Scholarship (runner-up) | 2015 |
| Brock Scholar's Award | 2008–12 |
| John Lavery Scholarship | 2011 |
| Brock Alumni Honours Scholarship | 2011 |
| Dean's Honours List | 2008–13 |

Service and Activity

Ad-hoc Reviewing

Cognition
Cognitive Science
Journal of Experimental Psychology: General
Journal of Experimental Psychology: Human Perception and Performance
Language & Cognition
Neuroscience and Biobehavioral Reviews
PLOS ONE
Psychological Science
Psychonomic Bulletin & Review

Professional Affiliations

Cognitive Science Society
Cognitive Neuroscience Society

Psychonomic Society

Students Mentored

Qi Xia (BSc, Cognitive Science)

The effects of physical distance on semantic similarity of abstract and concrete concepts

Brandon Strom (BSc, Cognitive Science)

The role of context in learning abstract and concrete concepts.

Roisin Healy (BSc, Psychological Science)

The role of autism-spectrum traits in the embodiment of manipulable object concepts.

Caitlin Dowling (BSc, Psychological Science)

Auditory word comprehension while performing a visual task

Committee Activity

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| Cognitive Science Society Member Abstract Review Committee | 2021 |
| UCONN Psychological Science Computer Committee Student Representative | 2016–20 |
| UCONN Graduate Student Advisory Committee: Representative | 2016–19 |
| UCONN Brain Imaging Research Center High-School Visit Host | 2018, 2019 |
| Eastern Connecticut State University Psychology Club Graduate Panelist | 2018 |
| Department of Psychological Science Graduate Colloquium Night Organizer | 2018, 2019 |
| CT Institute for the Brain and Cognitive Science Robust Statistics Workshop Organizer | 2016 |
| Expressive Communication and Origins of Meaning Reading Group Coordinator | 2016 |
| University of Connecticut IGERT Prospective Student Visit Committee | 2016 |
| University of Connecticut IGERT TalkShop Series Moderator | 2015–16 |

Technical Skills

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| R | E-Prime experiment design software |
| Linguistic and behavioral corpora/databases | Python |
| fMRI data analysis in AFNI, FSL, Freesurfer | Qualtrics survey software |
| Human Connectome Project MRI (structural and functional) data processing | Amazon Mechanical Turk |
| Shell scripting | Twitter API data analysis |
| Gorilla online experiment software | Natural language processing |
| Experiment Builder software | Vector-based semantic analysis |
| Presentation experiment design software | EEG acquisition |
| PsychoPy experiment design software | EEG/ERP data analysis in EEGLab (Matlab) |
| | SPSS |