

JEFFREY L. ELMAN

Department of Cognitive Science
University of California, San Diego
La Jolla, CA 92093

(858) 534-1147 (office)
jelman@ucsd.edu
<http://tatar.ucsd.edu/jeffelman>

EDUCATION

Harvard College: A.B. cum laude, 1969
University of Texas at Austin: Ph.D. (Linguistics), 1977

HONORS

University Fellow (University of Texas, 1975-1977)
Regents Faculty Fellowship (University of California, 1978)
Doctor Honoris Causa (New Bulgarian University, 2002)
Inaugural Fellow of the Cognitive Science Society (2002)
William Waldorf Astor Visiting Fellow (Oxford, 2004)
Chancellor's Associates Endowed Chair (University of California, San Diego, 2005)
David E. Rumelhart Prize for Theoretical Contributions to Cognitive Science (2007)
Outstanding Graduate Alumnus Award, University of Texas at Austin (2014)
Fellow of the American Psychological Society (2015)
Elected Member, American Academy of Arts & Sciences (2016)

POSITIONS

Dean, Division of Social Sciences, University of California, San Diego: 2008-2014
Interim Dean, Division of Social Sciences, University of California, San Diego: 2006-2008
Associate Dean, Division of Social Sciences, University of California, San Diego: 2002 to 2006
Founding Co-Director, Halicioğlu Data Sciences Institute, University of California, San Diego: 2017 to present
Founding Co-Director, Kavli Institute for Brain and Mind, University of California, San Diego: 2004 to 2012
Co-Director, Joint Ph.D. Program in Language and Communicative Disorders (University of California, San Diego & San Diego State University): 2003 to 2005
Chair, Department of Cognitive Science, University of California, San Diego: 1995 to 1998
Founding Director, Office of Online and Technology Enhanced Education, 2015 to 2017

Founding Director, Center for Research in Language, University of California, San Diego: 1985 to 1994; 2003 to 2004
Associate Director, Center for Research in Language, University of California, San Diego: 1994 to 2003
Distinguished Professor, Department of Cognitive Science, University of California, San Diego: 2006 to present
Professor, Department of Cognitive Science, University of California, San Diego: 1989 to 2006
Professor, Department of Linguistics University of California, San Diego: 1989 to 1994
Associate Professor, Department of Cognitive Science, University of California, San Diego: 1988 to 1989
Associate Professor, Department of Linguistics University of California, San Diego: 1983 to 1989
Assistant Professor, Department of Linguistics University of California, San Diego: 1977 to 1983

MAJOR RESEARCH INTERESTS

Parallel distributed processing and connectionist models; language processing; speech perception and recognition; neurolinguistics; artificial life; development

PROFESSIONAL ASSOCIATIONS AND SERVICE

President, Cognitive Science Society (1999-2000)
Board of Governors, Cognitive Science Society (1994-2000; 2008-2012)
Co-Director, Central and Eastern European Center for Cognitive Science, New Bulgarian University
Member, International Scientific Advisory Committee, National Taiwan University
Chair, National Institutes of Health LCOM Study Section (2009-2011)
Executive Board, Language Development Society
Member, Language and Communication Study Section, NIH (2007-20011)
External Advisory Board, Center for Mind & Brain, University of California, Davis
External Advisory Board, Institute of Cognitive Science, University of Colorado at Boulder
Consultant, Louisiana State Board of Regents
Science Advisory Board, Artificial Life VI
Series Editor, *Neural Networks and Connectionist Modeling Monograph Series*, MIT Press
Senior Editor, *Journal of the Cognitive Science Society* (1992-1995)
Editorial Boards: *Neural Computation*; *Connection Science*; *International Journal of Neural Systems*; *Neural Networks*; *Language and Cognitive Processes*; *Neural Computing Surveys*; *Bilingualism: Language & Cognition*

PUBLISHED WORK

Books

- Touretzky, D., Elman, J., Sejnowski, T., Hinton, G. (1990). *Connectionist Models Summer School Proceedings*. San Mateo, CA: Morgan Kaufman.
- Mozer, M., Smolensky, P., Touretzky, D., Elman, J., & Weigand, A. (1994). *Proceedings of the 1993 Connectionist Models Summer School*. Hillsdale, NJ: Erlbaum.
- Elman, J.L., Bates, E.A., Johnson, M.H., Karmiloff-Smith, A., Parisi, D., Plunkett, K. (1996). *Rethinking Innateness: A Connectionist Perspective on Development*. Cambridge, MA: MIT Press.
- Plunkett, K., & Elman, J.L. (1997). *Exercises in Rethinking Innateness: A Handbook for Connectionist Simulations*. Cambridge, MA: MIT Press.

Articles

- Elman, J. L. (1976). Lachmann's Law reconsidered. *Texas Linguistic Forum* IV, 20-38.
- Elman, J. L., Diehl, R. L., & Buchwald, S. E. (1977). Perceptual switching in bilinguals. *Journal of the Acoustical Society of America*, 62, 971-974.
- Elman, J.L. (1977). Response bias account of selective adaptation. *Journal of the Acoustical Society of America*, 62, S76-S77.
- Elman, J.L. (1978). Spanish noun and adjective stress: A non-phonological solution. In J. P. Lantour, J. M. Guitart, & F. Frank (Eds.) *Colloquium on Spanish and Luso-Brazilian Linguistics*. Washington, DC: Georgetown University Press. Pp. 1-8.
- Diehl, R. L., Elman, J. L., & McCusker, S. B. (1978). Contrast effects on stop consonant identification. *Journal of Experimental Psychology: Human Perception and Performance*, 4, 599-609.
- Elman, J. L. (1979). Perceptual origins of the phoneme boundary effect and selective adaptation to speech: A signal detection theory analysis. *Journal of the Acoustical Society of America*, 65, 190-207.
- Elman, J. L. (1980). Sinstral insight and dextral dominance. In J. Herron (Ed.), *Review of the Neuropsychology of Lefthandedness, Trends in Neurosciences*, 3, 24-25.
- Elman, J. L. (1980). Intonation-contingent adaptation to speech. *Perception & Psychophysics*, 27, 258-262.

- Elman, J. L. (1980). Toward an interactive model of speech perception. *American Association of Phonetics Sciences*, 7, 7-19.
- Elman, J. L., Takahashi, K., & Tohsaku, Y.-H. (1981). Asymmetries for the categorization of Kanji nouns, adjectives, and verbs presented to the left and right visual fields. *Brain and Language*, 13, 290-300.
- Elman, J. L., Takahashi, K., & Tohsaku, Y.-H. (1981). Lateral asymmetries for the identification of concrete and abstract Kanji. *Neuropsychologia*, 407-412.
- Elman, J. L. (1981). Effects of frequency-shifted feedback on the pitch of vocal productions. *Journal of the Acoustical Society of America*, 70, 45-50.
- Elman, J. L. (1982). Approaches to speech [Review of Perspectives on the study of speech]. *Contemporary Psychology*, 27, 316-317.
- Shand, M. A., & Elman, J. L. (1982). Recency effects for native and non-native language presentations. *Linguistics Notes from La Jolla*, 11, 68-75.
- Elman, J. L. (1983). Oral vs. manual tapping with delayed auditory feedback as a measure of cerebral dominance. *Journal of Speech and Hearing Research*, 26, 106-110.
- Elman, J. L. (1984). A new psychophysics [Review of Auditory perception: A new synthesis]. *Contemporary Psychology*, 29, 12-13.
- Elman, J. L., & McClelland, J. L. (1984). Speech perception as a cognitive process: The interactive activation model of speech perception. In N. Lass (Ed.), *Language and speech*. New York: Academic Press. Pp. 337-373.
- Stemberger, J. P., Elman, J. L., & Haden, P. (1985). Interference between phonemes during phoneme monitoring: Evidence for an interactive activation model of speech perception. *Journal of Experimental Psychology: Human Perception and Performance*, 11, 475-489.
- Elman, J. L., & McClelland, J. L. (1985). An architecture for parallel processing in speech recognition: The TRACE model. In M. R. Schroeder (Ed.), *Speech Recognition*. Gottingen: Bibliotheca Phonetica. Pp. 6-35.
- Elman, J. (1986). Compensation for restored phonemes: interactions between levels in speech perception. *Bulletin of the Psychonomic Society*, 24, 326-326.
- Elman, J. L., & McClelland, J. L. (1986). Exploiting lawful variability in the speech. In J. S. Perkell, D. H. Klatt, (Eds.), *Invariance and variability of speech processes*. Hillsdale, NJ: Lawrence Erlbaum Associates. Pp. 360-385.
- McClelland, J. L., & Elman, J. L. (1986). The TRACE model of speech perception. *Cognitive Psychology*, 18, 1-86.
- Elman, J. L., & McClelland, J. L. (1986). Interactive processes in speech perception:

The TRACE model (pp. 58-121). *Parallel distributed processing: Explorations in the microstructure of cognition. Vol. 2. Psychological and biological models.* Cambridge: MIT Press.

- Elman, J. L., & McClelland, J. L. (1988). Cognitive penetration of the mechanisms of perception: Compensation for coarticulation of lexically restored phonemes. *Journal of Memory and Language*, 27, 143-165.
- Elman, J. L., & Zipser, D. (1988). Learning the hidden structure of speech. *Journal of the Acoustical Society of America*, 83, 1615-1626.
- Elman, J. L. (1989). Representation and structure in connectionist models. *Center for Research in Language Technical Report 8903*. University of California, San Diego.
- Elman, J. L. (1989). Structured representations. *Proceedings of the Eleventh Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Harris, C.L., & Elman, J.L. (1984). Representing variable information with simple recurrent networks. *Proceedings of the Eleventh Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum. Pp. 635-642.
- Elman, J. L. (1989). Connectionist approaches to acoustic/phonetic processing. In W. Marslen-Wilson (Ed.), *Lexical representation and processing*. Cambridge: MIT Press.
- Elman, J. L. (1990). Finding structure in time. *Cognitive Science*, 14, 179-211.
- Nolfi, S., Elman, J.L., & Parisi, D. (1990). Learning and evolution in neural networks. *Center for Research in Language Technical Report 9019*. University of California, San Diego.
- Elman, J. L. (1990). Representation and structure in connectionist models. In Gerald Altmann (Ed.) *Cognitive models of speech processing*. Cambridge, MA: MIT Press. Pp. 345-382.
- Elman, J. L. (1991). Incremental learning; Or the importance of starting small. In *Proceedings of the Thirteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Bartell, B. T., Cottrell, G. W., & Elman, J. L. (1991). The role of input and target similarity in assimilation. In *Proceedings of the Thirteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Elman, J. L. (1991). Distributed representations, simple recurrent networks, and grammatical structure. *Machine Learning*, 7, 195-224.
- Elman, J. L. (1992). Grammatical structure and distributed representations. In Steven Davis (Ed.), *Connectionism: Theory and Practice*. Oxford: Oxford University Press.

- Hare, M., & Elman, J.L. (1992). A connectionist account of English inflectional morphology: Evidence from language change. In *Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Weckerly, J., & Elman, J.L. (1992). A PDP approach to processing center-embedded sentences. In *Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Elman, J.L. (1993). Learning and development in neural networks: The importance of starting small. *Cognition*, 48, 71-99.
- Bates, E., & Elman, J. L. (1993). Connectionism and the study of change. In Mark Johnson (Ed.), *Brain development and cognition: A reader*. Oxford: Blackwell Publishers.
- Hare, M., & Elman, J.L. (1993). From weared to wore: A connectionist account of language change. In *Proceedings of the Fifteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum. Pp. 528-533.
- Shultz, T.R., & Elman, J.L. (1994). Analyzing cross-connected networks. In J.D. Cowan, G. Tesauro, and J. Alspector (Eds.), *Advances in Neural Information Processing Systems 6*. San Mateo, CA: Morgan Kaufmann.
- Elman, J. L. (1994). Learning and development in neural networks: The importance of starting small. In C. Umiltà and M. Moscovitch (Eds.), *Attention and Performance XV: Conscious and Nonconscious Information Processing*. Hillsdale, NJ: Erlbaum.
- Bates, E., Elman, J.L. & Li, P. (1994). Language in, on and about time. In M. M. Haith, J.B. Benson, R. J. Roberts, and B. F. Pennington (Eds.), *The Development of Future-Oriented Processes*. Chicago: University of Chicago Press. Pp. 293-321.
- Thyme, A., Ackerman, F., & Elman, J.L. (1994). Finnish nominal inflections: Paradigmatic patterns and token analogy. In S.D. Lima, R.L. Corrigan, and G.K. Iverson (Eds.), *The reality of linguistic rules*. John Benjamins. Pp. 445-466.
- Nolfi, S., Elman, J.L., & Parisi, D. (1994). Learning and evolution in neural networks. *Adaptive Behavior*, 3:1, 5-28.
- Hare, M., & Elman, J.L. (1995). Learning and morphological change. *Cognition*, 56, 61-98.
- Hare, M., Elman, J.L., & Daugherty, K.G. (1995). Default categorization in connectionist networks. *Language and Cognitive Processes*, 10, 601-630.
- Elman, J.L. (1995). Language processing. In M. Arbib (Ed.) *The Handbook of Brain Theory and Neural Networks*. Cambridge, MA: MIT Press. Pp. 508-513.
- Elman, J.L. (1995). Language as a dynamical system. In R. Port and T. van Gelder

- (Eds.), *Mind as Motion: Dynamical Perspectives on Behavior and Cognition*. Cambridge, MA: MIT Press.
- Rebotier, T., & Elman, J.L. (1995). Explorations with the dynamic wave model. In M. Mozer (Ed.), *Advances in Neural Information Processing Systems 7*. San Mateo, CA: Morgan Kaufmann.
- Wiles, J., & Elman, J.L. (1995). Learning to count without a counter: A case study of dynamics and activation landscapes in recurrent networks. In *Proceedings of the Seventeenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Bates, E., & Elman, J. (1996). Learning rediscovered: A perspective on Saffran, Aslin, and Newport. *Science*, 274:5294 (December 13, 1996.), 1849-1850.
- Elman, J., & Bates, E. (1997). Acquiring language. *Science*, 276, 1180-1180.
- Plunkett, K., Karmiloff-Smith, A., Bates, E.A., Elman, J.L., & Johnson, M.H. (1997). Connectionism and developmental psychology. *Journal of Child Psychology and Psychiatry*, 38, 53-80.
- Elman, J.L., & Hare, M.L. (1997). Single mechanism= single representation? No!! In *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Erlbaum.
- Johnson, M.H., Bates, E., Elman, J.L., Karmiloff-Smith, A., & Plunkett, K. (1997). Constraints on the construction of cognition (peer commentary on Quartz & Sejnowski). *Behavioral and Brain Sciences*, 20, 569-570.
- Elman, J.L. (1998). Generalization, simple recurrent networks, and the emergence of structure. In M. A. Gernsbacher & S. J. Derry (Eds.) *Proceedings of the Twentieth Annual Conference of the Cognitive Science Society*. Mahwah, NJ: Erlbaum.
- Elman, J.L. (1998). Connectionism, artificial life, and dynamical systems. In William Bechtel & George Graham (Eds.), *A Companion to Cognitive Science*. Oxford: Basil Blackwood. Pp. 48-505
- Bates, E., Elman, J., Johnson, M., Karmiloff-Smith, A., Parisi, D., & Plunkett, K. (1998). Innateness and emergentism. In William Bechtel & George Graham (Eds.), *A Companion to Cognitive Science*. Oxford: Basil Blackwood. Pp. 590-601.
- Rodriguez, P., & Elman, J. (1999). Watching the transients: viewing a simple recurrent network as a limited counter. *Behaviormetrika*, 26, 51-74.
- Rodriguez, P., Wiles, J. and Elman, J. (1999) A Recurrent neural network that learns to count. *Connection Science*, 11, 5-40.
- Elman, J.L. (1999). The emergence of language: A conspiracy theory. In B. MacWhinney (Ed.), *The emergence of language*. Hillsdale, NJ: Lawrence

- Earlbaum Associates. Pp. 1-27.
- Karmiloff-Smith, A., Plunkett, K., Johnson, M., Elman, J., & Bates, E. (1999). What does it mean to claim that something is "innate"? Response to Clark, Harris, Lightfoot and Samuels. *Mind and Language*, 13, 58-597.
- Plunkett, K., Elman, J.L., & Bates, E. (1999). Understanding the modelling endeavour. *Journal of Child Language*, 26, 217-260.
- Seidenberg, M.S., & Elman, J.L. (1999). Do infants learn grammar with algebra or statistics? *Science*, 284, 434-435.
- Seidenberg, M.S., & Elman, J.L. (1999). Networks are not 'hidden rules'. *Trends in Cognitive Science*, 3, 288-289.
- Bates, E., & Elman, J. (2000). The ontogeny and phylogeny of language: A neural network perspective. In S. T. Parker, J. Langer, & M. L. McKinney (Eds.), *Biology, Brains, and Behavior: The evolution of human development*. Santa Fe, NM: School of American Research Press. Pp. 89-130.
- Morris, W.C., Cottrell, G.W., & Elman, J. (2000). A connectionist simulation of the empirical acquisition of grammatical relations. In S. Wermter & R. Sun (Eds.) *Hybrid Neural Systems*. Berlin: Springer Verlag. Pp. 175-193.
- Dick, F., & Elman, J.L. (2001). The frequency of major sentence types over discourse levels: A corpus analysis. *CRL Newsletter*, Vol. 13, No. 1.
- Lewis, J.D., & Elman, J.L. (2001). A connectionist investigation of linguistic arguments from the poverty of the stimulus: Learning the unlearnable. In J.D. Moore and K. Stenning (Eds.) *Proceedings of the Twenty-Third Annual Conference of the Cognitive Science Society*, Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 552-557.
- McRae, K., Hare, M., Ferretti, T., & Elman, J. (2001). Activating verbs from typical agents, patients, instruments, and locations via event schemas. In J.D. Moore and K. Stenning (Eds.) *Proceedings of the Twenty-Third Annual Conference of the Cognitive Science Society*, Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 617-622.
- Elman, J. (2001). Connectionism and language acquisition. In M. Tomasello & E. Bates (Eds.), *Essential readings in language development*. Oxford: Basil Blackwell.
- Bates, E., & Elman, J. (2001). Connectionism and the study of change. In M. Johnson (Ed.), *Brain development and cognition: A reader*. (2nd ed). Oxford: Blackwell Publishers. [revised/updated/extended version of Bates, E., & Elman, J. Connectionism and the study of change. In M. Johnson (Ed.), *Brain development and cognition: A reader*. Oxford: Blackwell Publishers, 1993, 623-642.]

- Lewis, J., & Elman, J. (2001). A connectionist investigation of linguistic universals: Learning the unlearnable. In R. Amos, C. Bradford, C. Jefferson, and D. Meyers (Eds.), *Proceedings of the Fifth International Conference on Cognitive and Neural Systems*. Center for Adaptive Systems and the Department of Cognitive and Neural Systems, Boston University.
- Lewis, J., & Elman, J. (2002). Learnability and the statistical structure of language: Poverty of the stimulus arguments revisited. In *Proceedings of the 26th Annual Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press. Pp. 359-370.
- Hare, M., McRae, K., & Elman, J.L. (2003). Sense and structure: Meaning as a determinant of verb subcategorization preferences. *Journal of Memory and Language*, 48, 281-303.
- Elman, J. (2003). Development: It's about time. *Developmental Science*, 6, 430-433.
- Lewis, J.D., Courchesne, E., & Elman, J.L. (2003). Patterns of brain growth predict patterns of long-distance connectivity. In *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*. Chicago, IL.
- Elman, J.L. (2004). Generalization from sparse input. *Proceedings of the 38th Annual Meeting of the Chicago Linguistic Society*.
- Lewis, J.D., Courchesne, E., & Elman, J.L. (2004). Growth trajectories and corticocortical connections. In *Proceedings of the 37th Annual Gatlinburg Conference on Research & Theory in Intellectual and Developmental Disabilities*. Pp. 104.
- Hare, M., McRae, K., & Elman, J.L. (2004). Admitting that admitting verb sense into corpus analyses makes sense. *Language and Cognitive Processes*, 19, 181-224.
- Elman, J., Hare, M., & McRae, K. (2004). Cues, constraints, and competition in sentence processing. In M. Tomasello and D. Slobin (Eds.) *Beyond Nature-Nurture: Essays in Honor of Elizabeth Bates*. Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 111-138.
- Lewis, J.D., Courchesne, E., & Elman, J. (2004). Growth trajectories and corticocortical connections. Paper presented at the 37th Annual Gatlinburg Conference on Research & Theory in Intellectual Developmental Disabilities. San Diego, CA.
- Elman, J.L. (2004). An alternative view of the mental lexicon. *Trends in Cognitive Science*, 8, 301-306.
- Roland, D., Elman, J.L., & Ferreira, V.S. (2004). Modeling ambiguity resolution. *Technical Report of the Institute of Electronics, Information and Communication Engineers*, 2004-07.
- Elman, J.L. (2005). Computational approaches to language acquisition. *Encyclopedia of Language and Linguistics*. (K. Brown, Ed.) Oxford: Elsevier. Pp. 726-732.

- Elman, J.L. (2005). Connectionist models of development: Where next? *Trends in Cognitive Science*, 9, 111-117.
- Roland, D., Elman, J.L., & Ferreira, V. (2006). Why is that? Structural prediction and ambiguity resolution in a very large corpus of English sentences. *Cognition*, 98, 245-272.
- McRae, K., Hare, M., Elman, J.L., & Ferretti, T.R., (2006). A basis for generating expectancies for verbs from nouns. *Memory and Cognition*, 33, 1174-1184.
- Aimone, J.B., Wiles, J., Elman, J., & Gage, F.H. (2005). Computational Function of Neurogenesis in the Dentate Gyrus. Cold Spring Harbor Meeting on Learning and Memory, 20-24th April 2005.
- Borovsky, A., & Elman, J.L. (2006). Language input and semantic categories: A relation between cognition and early word learning. *Journal of Child Language*, 33, 759-790.
- Kertz, L., Kehler, A., & Elman, J.L. (2006). Grammatical and coherence-based factors in pronoun interpretation. Proceedings of the 29th Annual Meeting of the Cognitive Science Society.
- Rohde, H., Kehler, A., & Elman, J.L. (2006). Event structure and discourse coherence biases in pronoun interpretation. Proceedings of the 29th Annual Meeting of the Cognitive Science Society.
- Shieh, D.X., & Elman, J.L. (2006). The Divergent-Reconvergent model of serial order encoding and retrieval. Proceedings of the 29th Annual Meeting of the Cognitive Science Society.
- Roland, D., Dick, F., & Elman, J.L. (2007). Frequency of basic English grammatical structures: A corpus analysis. *Journal of Memory and Language*, 57, 348-379.
- Huang, M-X., Saong, T., Hagler, D.J., Podgorny, I., Jousmaki, V., Cui, L., Gaa, K., Harrington, D.L., Dale, A.M., Lee, R.R., Elman, J., & Halgren, E. (2007). A novel integrated MEG and EEG analysis method for dipolar sources. *NeuroImage*, 37, 731-748. . [doi:10.1016/j.neuroimage.2007.06.002][PMC2819417]
- Lewis, J.D., & Elman, J.L. (2008). Growth-related neural reorganization and the autism phenotype: A test of the hypothesis that altered brain growth leads to altered connectivity. *Developmental Science*, 11, 135-155. [PMC2706588]
- Kehler, A., Kertz, L., Rohde, H., & Elman, J.L. (2008). Coherence and coreference revisited. *Journal of Semantics*, 25, 1-44.

- Elman, J.L. (2008). The shape bias: An important piece of a bigger puzzle. *Developmental Science*, 11, 219-222. [PMC2647361]
- Sibley, D.E., Kello, C.T., Plaut, D.C., & Elman, J.L. (2008). Large-scale modeling of wordform learning and representation. *Cognitive Science*, 32, 741-754. [PMC2811333]
- Hare, M., Elman, J.L., Tabaczynski, T., & McRae, K. (2009). The wind chilled the spectators, but the wine just chilled: Sense, structure, and sentence comprehension. *Cognitive Science*, 33, 610-628. [PMC2742476]
- Elman, J.L. (2009). On the meaning of words and dinosaur bones: lexical knowledge without a lexicon. *Cognitive Science*, 33, 1-36. [PMC2721468]
- Leonard, M.K., Brown, T.T., Travis, K.E., Gharapetian, L., Hagler, D.J., Dale, A.M., Elman, J.L., Halgren, E. (2010). Spatiotemporal dynamics of bilingual word processing. *Neuroimage*, 49, 3286-3294. [doi:10.1016/j.neuroimage.2009.12.009] [PMC2824560]
- Borovsky, A., Kutas, M., & Elman, J. (2010). Learning to use words: Event-related potentials index single-shot contextual word learning. *Cognition*, 116, 289-296. [doi:10.1016/j.cognition.2010.05.004] [PMC2904319]
- Bicknell, K., Elman, J.L., Hare, M., McRae, K., & Kutas, M. (2010). Effects of event knowledge in processing verbal arguments. *Journal of Memory and Language*, 63, 489-505. [doi:10.1016/j.jml.2010.08.004] [PMC2976562]
- Travis, K.E., Leonard, M.K., Brown, T.T., Hagler, D.J., Curran, M., Dale, A.M., Elman, J.L., & Halgren, E. (2011). Spatiotemporal neural dynamics of word understanding in 12-18 month old infants. *Cerebral Cortex*, 8, 1832-1839. [doi:10.1093/cercor/bhq259] [PMCID in process]
- Matsuki, K., Chow, T., Hare, M., Elman, J.L., Scheepers, C., & McRae, K. (2011). Event-based plausibility immediately influences on-line language comprehension. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 37, 913-934. [doi:10.1037/a0022964] [PMC3130834]
- Elman, J.L. (2011). Lexical knowledge without a mental lexicon? *The Mental Lexicon*, 60, 1-33. [doi:10.1075/ml.6.1.01elm]
- Leonard, M.K., Torres, C., Travis, K.E., Brown, T.T., Hagler, D.J., Jr., Dale, A.M., Elman, J.L., Halgren, E. (2011). Language proficiency modulates the recruitment of non-classical language areas in bilinguals. *PLoS ONE*, 6, 1-10. [doi:10.1371/journal.pone.0018240] [PMC3063800]
- Metusalem, R., Kutas, M., Urbach, T., Hare, M., McRae, K., & Elman, J.L. (2012).

Generalized event knowledge activation during sentence comprehension. *Journal of Memory and Language*.

Borovsky, A., Elman, J.L., & Fernald, A. (2012). Knowing a lot for one's age: Vocabulary skill and not age is associated with anticipatory sentence interpretation in children and adults. *Journal of Experimental Child Psychology*, 112, 417-436. [doi:10.1016/j.jecp.2012.01.005]

Borovsky, A., Elman, J.L., & Kutas, M. (2012). Once is enough: N400 indexes semantic integration of novel word meanings from a single exposure in context. *Language Learning and Development*, 8, 278-302. [doi:10.1080/15475441.2011.614893]

Borovsky, A., Sweeney, K., Elman, J.L., Fernald, A. (2012). Real-time interpretation of novel events across childhood. *Journal of Memory and Language*, 112, 417-436.

Travis, K.E., Curran, M.M., Torres, C., Leonard, M.K., Brown, T.T., Dale, A.M., Elman, J.L., & Halgren, E. (2013). Age-related changes in tissue signal properties within cortical areas important for word understanding in 12-19 month old infants. *Cerebral Cortex*. [doi: 10.1093/cercor/bht052]

Travis, K.E., Leonard, M.K., Chan, A.M., Torres, C., Sizemore, M.L., Qu, Z., Eskandar, E., Dale, A.M., Elman, J.L., Cash, S.S., Halgren, E. (2013). Independence of early speech processing from word meaning. *Cerebral Cortex*. [doi: 10.1093/cercor/bhs228]

Borovsky, A., Elman, J.L., & Kutas, M. (2013). Getting it right: Word learning across the hemispheres. *Neuropsychologia*. [doi:10.1016/j.neuropsychologia.2013.01.027] [PMID: 23416731]

Borovsky, A., Burns, E., Elman, J.L., & Evans, J.L. (2013). Lexical activation during sentence comprehension in adolescents with history of Specific Language Impairment. *Journal of Communication Disorders*.

Elman, J.L. (2014). Systematicity in the lexicon: On having your cake and eating it too. In P. Calvo and J. Symons (Eds.) . *The Architecture of Cognition: Rethinking Fodor and Pylyshyn's Systematicity Challenge*. Cambridge, MA: MIT Press. Pp. 115-145.

Ellis, E.M., Borovsky, A., Elman, J.L., & Evans, J.L. (2015). Novel Word Learning: An Eye-Tracking Study Are 18-Month-Old Late Talkers Really Different from their Typical Peers? *Journal of Communication Disorders*, 58, 143-157.

Borovsky, A., Ellis, E.M., Evans, J.L., & Elman, J.L. (2016). Lexical leverage: Category knowledge boosts real-time novel word recognition in two-year-olds. *Developmental Science*, 19, 918-932. [doi: 10.1111/desc.1234].

- Metusalem, R., Kutas, M., Urbach, T.P., & Elman, J.L. (2016). Hemispheric asymmetry in event knowledge activation during incremental language comprehension: A visual half-field ERP study. *Neuropsychologia*, 84, 252-271. [doi: 10.1016/j.neuropsychologia.2016.02.004]
- Borovsky, A., Ellis, E.M., Evans, J.L., & Elman, J.L. (2016). Semantic structure in vocabulary knowledge interacts with lexical and sentence processing in infancy. *Child Development*, 87, 1893-1908. [doi: 10.1111/cdev.12554]
- Elman, J. L. & McRae, K. (2017). [A model of event knowledge](#). In Gunzelmann, G., Howes, A., Tenbrink, & T., Davelaar, E. (Eds.), *Proceedings of the Thirty-Ninth Annual Meeting of the Cognitive Science Society* (pp. 337-342). Austin, TX: Cognitive Science Society.
- Christidis, N. K., Elman, J. L., & McRae, K. (2018, July). Using graph theory to understand the structure of event knowledge in memory. Poster presented at the Twenty-Eighth Annual Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Science, St. John's, Canada.