

Drew H. Abney

Department of Psychology
Center for Cognition, Action, & Perception
University of Cincinnati

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EMPLOYMENT

Assistant Professor 2019-
University of Cincinnati
Department of Psychology
Center for Cognition, Action, & Perception

EDUCATION

Postdoctoral Fellow in Developmental Psychology 2016-2019
Indiana University
Department of Psychological and Brain Sciences
Advisors: Linda B. Smith & Chen Yu

Ph.D. in Cognitive and Information Sciences 2016
University of California, Merced
Cognitive and Information Sciences
Advisors: Christopher T. Kello (Chair), Ramesh Balasubramaniam, and Anne S. Warlaumont

M.S. in Experimental Psychology 2012
Illinois State University
Department of Psychology
Dual degrees: Cognitive/Behavioral Sciences & Quantitative Psychology
Advisors: Jeff Wagman (Chair) & Dawn McBride

M.S. in Science, Technology, Engineering, & Mathematics Education 2010
Illinois State University
Department of Technology

B.S. in Technology Education 2008
Illinois State University
Department of Technology

PUBLICATIONS

Peer-Reviewed Journal Articles (21)

** = equal contribution*

*Borjon, J.I., ***Abney, D.H.**, Smith, L.B., Yu, C. (2018). Developmentally changing attractor dynamics of manual actions with objects in late infancy. *Complexity*.

- Abney, D.H.**, Dale, R., Louwerse, M.M., Kello, C. T. (2018). The bursts and lulls of multimodal interaction: Temporal distributions of behavior reveal differences between verbal and non-verbal communication. *Cognitive Science*. 42(4), 1297-1316.
- Wagman, J.B., **Abney, D.H.**, & Rosenbaum, D.A. (2018). Second-order grasp planning reflects sensitivity to inertial factors. *Human Movement Science*. 57, 451-460.
- Jordan, J.S., Schloesser, D.S., Bai, J., **Abney, D.H.** (2017). Multi-scale contingencies during individual and joint action. *Topics in Cognitive Science*. 10(1), 36-54.
- Abney, D.H.**, Warlaumont, A.S., Oller, D.K., Wallot, S. & Kello, C.T. (2017). Multiple coordination patterns in infant and adult vocalizations. *Infancy*. 22(4), 514-539.
- Abney, D.H.**, Kello, C.T., & Balasubramaniam, R. (2016). Introduction and application of the multiscale coefficient of variation analysis. *Behavior Research Methods*. 49(5), 1571-1581.
- Ross, J.M., Warlaumont, A.S., **Abney, D.H.**, Rigoli, L.M. & Balasubramaniam, R. (2016). Influence of musical groove on postural sway. *Journal of Experimental Psychology: Human Perception and Performance*. 42(3), 308.
- Abney, D.H.**, & Wagman, J.B. (2015). Direct learning in auditory perception: An information-space analysis of perception of object length by sound. *Ecological Psychology*. 27(4), 335-356.
- Abney, D.H.**, Warlaumont, A.S., & Kello, C.T. (2015). Production and convergence of multiscale clustering of speech. *Ecological Psychology*. 27(3), 222-235
- Abney, D.H.**, Paxton, A., Dale, R., & Kello, C. (2015). Movement dynamics reflect a functional role for weak coupling and role structure in dyadic problem solving. *Cognitive Processing*. 16(4), 325-332.
- Abney, D.H.**, Paxton, A., Kello, C., & Dale, R. (2014). Complexity matching in dyadic interaction. *Journal of Experimental Psychology: General*, 143(6), 2304-2315.
- Abney, D.H.**, Warlaumont, A.S., Haussmann, A., Ross, J., Wallot, S. (2014). Using nonlinear methods to quantify infant motor and vocal development. *Frontiers in Developmental Psychology*, 143(6), 2304-2315.
- Abney, D.H.**, McBride, D.M., Conte, A. & Vinson, D.W. (2014). Response dynamics in prospective memory. *Psychonomic Bulletin & Review*. 22(4), 1020-1028
- Vinson, D. W., **Abney, D. H.**, Dale, R., & Matlock, T. (2014). High-level context effects on spatial displacement: the effects of body orientation and language on memory. *Frontiers in psychology*, 5, 637.
- Abney, D.H.**, Wagman, J.B., & Schneider, J. (2014). Changing grasp position on a wielded object provides self-training for perception of length. *Attention, Perception, & Psychophysics*. 76(1), 247-254.

Abney, D.H., Dale, R., Yoshimi, J., Fusaroli, R., Kello, C.T., & Tylen, K. (2014). Joint perceptual decision-making: A case study in explanatory pluralism. *Frontiers in Theoretical and Philosophical Psychology*. 5, 330.

Wagman, J.B. & **Abney, D.H.** (2013). Is calibration of the perception of length modality-independent? *Attention, Perception, & Psychophysics*. 75(5), 824-829.

Abney, D.H., McBride, D.M., & Petrella, S.N. (2013). Interactive effects in transfer-appropriate processing for event-based prospective memory. *Memory & Cognition*. 41(7), 1032-1045.

McBride, D.M. & **Abney, D.H.** (2012). A comparison of transfer-appropriate processing and multi-process frameworks for prospective memory performance. *Experimental Psychology*, 59(4), 190.

Wagman, J.B. & **Abney, D.H.** (2012). Transfer of recalibration from audition to touch: Modality independence as a special case of anatomical independence. *Journal of Experimental Psychology: Human Perception and Performance*. 38(3), 589-602.

McBride, D.M., Beckner, J. & **Abney, D.H.** (2011). Effect of placement of prospective memory cues in an ongoing task on prospective memory task performance. *Memory & Cognition*. 39, 1222-1231.

Methods papers (2)

Slone, L., **Abney, D.H.**, Borjon, J.I., Chen, C., Franchak, J.M., Pearcy, D., Suarez-Rivera, C., Xu, L., Zhang, Y., Smith, L.B., Yu, C. (2018). Head-mounted eye-tracking of children's dynamic visual attention during naturalistic behavior. *Journal of Visualized Experiments*.

Borjon, J.I., Schroer, S., Bambach, S., Slone, L., **Abney, D.H.**, Crandall, D., Smith, L.B. (2018). Capturing the egocentric view of infants and toddlers with head-mounted cameras. *Journal of Visualized Experiments*.

Edited Books

Weast-Knapp, J., Malone, M., **Abney, D.H.** (Eds) (2015). Studies in Perception and Action XIII. Proceedings from the Eighteenth International Conference on Perception and Action. Minneapolis, MN.

Peer-Reviewed Proceedings (11)

Karmazyn, H., **Abney, D.H.**, Crandall, D., Yu, C., Smith, L.B. (2019). How do infants start learning object names in a sea of clutter? *Proceedings of the 41th Annual Meeting of the Cognitive Science Society*.

Abney, D.H., Karmazyn, H., Smith, L.B., Yu, C. (2018). Hand-eye coordination and visual attention in infancy. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*.

Abney, D.H., Smith, L.B., Yu, C. (2017). It's Time: Quantifying the Relevant Timescales for Joint Attention. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*.

Abney, D.H., Dale, R., Kello, C.T., Louwerse, M.M. (2017). Burstiness across multimodal human interaction reveals differences between verbal and non-verbal communication. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*.

Xu, T. L., **Abney, D.H.**, Yu, C. (2017). Discovering Multicausality in the Development of Coordinated Behavior. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*.

Bunce, J.P., **Abney, D. H.**, Gordon, C.L., Spivey, M.J., & Scott, R.M. (2016). Using Motor Dynamics to Explore Real-time Competition in Cross-situational Word Learning: Evidence From Two Novel Paradigms. In J. Trueswell, A. Papafragou, D. Grodner, & D. Mirman (Eds.), *Proceedings of the 36th Annual Meeting of the Cognitive Science Society*.

Bunce, J., Gordon, C., **Abney, D.H.**, Fleming, M., Greenwood, M., Chiu, E., Spivey, M.J., Scott, R. (2016). Mouse Tracking Reveals Knowledge of Multiple Competing Referents During Cross-situational Word Learning. *Boston University Conference on Language Development Proceedings*.

Abney, D. H. & Thomas, B. (2015). Exploration in information space during affordance perception. In Weast-Knapp, J., Malone, M., & Abney, D.H. (Eds.), *Studies in Perception and Action XIII: Proceedings from the Eighteenth International Conference on Perception and Action*.

Schloesser, D.S., Wagman, J.B. & **Abney, D. H.** (2015). Flip this rod! Changing grasp position can recalibrate perception of length by dynamic touch. In Weast-Knapp, J., Malone, M., & Abney, D.H. (Eds.), *Studies in Perception and Action XIII: Proceedings from the Eighteenth International Conference on Perception and Action*.

Paxton, A., **Abney, D.H.**, Kello, C. K., & Dale, R. (2014). Network analysis of multimodal, multiscale coordination in dyadic problem solving. In P. Bello, M. Guarini, M. McShane & B. Scassellati (Eds.) *Proceedings of the 36th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Abney, D. H., Paxton, A., Kello, C., & Dale, R. (2013). Complexity matching in dyadic interactions. In P. Passos, J. Barrios, R. Cordovil, D. Araujo, & F. Melo (Eds.), *Studies in Perception and Action XII: Proceedings from the Seventeenth International Conference on Perception and Action*.

Commentaries

Vinson, D.W., **Abney, D.H.**, Amso, D., Anderson, M. L., Chemero, T., Cutting, J.E., Dale, R., Richardson, D., Friston, K., Gallagher, S., Jordan, J.S., Mudrik, L., Ondobaka, S., Shams, L., Shiffrar, M., & Spivey, M. (2015). Perception, as You

Make It. Commentary on C. Firestone & B. Scholl's "Cognition does not affect perception: Evaluating the evidence for 'top-down' effects". *Behavioral and Brain Sciences*. 39.

Manuscripts in preparation (in writing stage)

Slone, L.K., **Abney, D.H.**, Smith, L.B., Yu, C. (*in preparation*). Bursty distributions of parent speech predict toddler word learning. To be submitted to *TBD*.

Abney, D.H., Suanda, S., Smith, L.B., Yu, C. (*in preparation*). What are you looking at? Why parent-infant coordinated attention predicts later vocabulary. To be submitted to *Infancy*.

Abney, D.H., Smith, L.B., Yu, C. (*in preparation*). Fixation-reach latency during pre-reach predicts reaching kinematics in infancy. To be submitted to *Infancy*.

Abney, D.H., Jayaraman, S., Fausey, C.M., Slone, L.K., Smith, L.B. (*in preparation*). The temporal structure of everyday visual experience supports infant statistical learning. To be submitted to *Current Biology*.

Abney, D.H., Karmazyn, Smith, L.B., Yu, C. (*in preparation*). Emerging manual actions impact visual attention. To be submitted to *Developmental Science*.

***Abney, D.H.**, *da Silva, E., Bertenthal, B.I. (*in preparation*). Physiological synchrony predicts distress profiles in early infancy. To be submitted to *Psychological Science*.

Xu, T. L., **Abney, D.H.**, Foster, S., Smith, L.B., Yu, C. (*in preparation*). The multipathway solution for the development of coordinated behaviors. To be submitted to *Cognitive Science*.

Xu, T. L., **Abney, D.H.**, Yu, C. (*in preparation*). Quantifying multimodal social interactions with cross recurrence block quantification analysis. To be submitted to *Behavior Research Methods*.

Borjon, J.I., **Abney, D.H.**, Smith, L.B., Yu, C. (*in preparation*). The sensorimotor development of naturalistic looking behavior in infants. To be submitted to the *Proceedings of the National Academy of Sciences*.

GRANTS

Abney, D.H. (2018). Sensorimotor foundations of visual attention in infants. National Institute of Child Health and Development (K99). Scored, not funded.

PRESENTATIONS

Invited Talks

- Abney, D.H. (2019). The sensorimotor basis for development. University of Cincinnati, Cincinnati, OH.
- Abney, D.H. (2018). On form and function: Investigating temporal distributions of behavior in infancy. Developmental Psychology Brownbag, University of Chicago, Chicago, IL.
- Abney, D.H. (2018). On form and function: Investigating temporal distributions of behavior in infancy. Cognitive and Behavioral Sciences Colloquium, Illinois State University, Normal, IL.
- Abney, D.H. (2018). On form and function: Investigating temporal distributions of behavior in infancy. Heymans Institute for Psychological Research, University of Groningen, The Netherlands.
- Abney, D.H. (2018). On form and function: Investigating temporal distributions of behavior in infancy. CogLunch Talk Series, Indiana University, Bloomington, IN.
- Abney, D.H. (2016). The Complexity Matching hypothesis for human communication. Cognitive and Behavioral Sciences Colloquium, Illinois State University, Normal, IL.
- Abney, D.H. (2016). The Complexity Matching hypothesis for human communication. Cognition, Perception, and Action (CAP) Speaker Series, University of Cincinnati, Cincinnati, OH.
- Abney, D.H. (2016). Complexity matching, coordination patterns, and development. CogNetwork Colloquium Series, University of California, Berkeley, Berkeley, CA.
- Abney, D.H. (2015). Complexity matching, coordination patterns, and development. Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN.
- Abney, D.H. (2014). Complexity matching in conversational contexts. CogNetwork Colloquium Series, University of California, Berkeley, Berkeley, CA.

Conference Symposia Organized

- Abney, D.H. (2015). Advances in Strong Anticipation and Complexity Matching. Symposium organized at the Eighteenth International Conference on Perception and Action, Minneapolis, MN.

Oral Presentations

- *Borjon, J.I., ***Abney, D.H.**, Yu, C., Smith, L.B. (2019). Attractor dynamics of vocal production in late infancy. *The 4th Lancaster Conference on Infant and Early Child Development*.
- *Borjon, J.I., ***Abney, D.H.**, Yu, C., Smith, L.B. (2019). The developmental of vocal-manual coordination in late infancy. *The 20th International Conference of Perception and Action, Groningen, The Netherlands*.
- Karmazyn, H., **Abney, D.H.**, Crandall, D., Yu, C., Smith, L.B. (2019). How do infants start learning object names in a sea of clutter? *The 41th Annual Meeting of the Cognitive Science Society*.
- Abney, D.H.** (2019). Finding structure in time: Uncovering clustering dynamics in large, multimodal datasets. *Society for Research in Child Development*.
- Abney, D.H.** (2019). Finding structure in time: Uncovering clustering dynamics in large, multimodal datasets. *International Convention of Psychological Science*.
- Abney, D.H.** (2018). Finding structure in time: Uncovering clustering dynamics in large, multimodal datasets. *Biannual Meeting of the International Congress for Infant Studies. [hands-on methods workshop]*
- Abney, D.H.**, Smith, L.B., Yu, C. (2018). Sensorimotor alignment impacts visual attention in infancy. *Biannual Meeting of the International Congress for Infant Studies*.
- Abney, D.H.**, Smith, L.B., Yu, C. (2018). Sensorimotor alignment impacts visual attention in infancy. *North American Meeting of the International Society for Ecological Psychology*.
- Abney, D.H.**, Smith, L.B., Yu, C. (2018). Sensorimotor alignment impacts visual attention in infancy. *Annual Meeting of the Jean Piaget Society*.
- Xu, T. L., **Abney, D.H.**, Smith, L.B., Yu, C. (2018). New technologies lead to new discoveries: A case study of using computational algorithms to understand parent-infant interaction. *Biannual Meeting of the International Congress for Infant Studies*.
- Slone, L.K., **Abney, D.H.**, Smith, L.B., Yu, C. (2018). The temporal structure of parent speech predicts infant word learning. *Biannual Meeting of the International Congress for Infant Studies*.
- Abney, D.H.**, Dale, R., Kello, C.T., Louwerse, M.M. (2017). Burstiness across multimodal human interaction reveals differences between verbal and non-verbal communication. *The 39th Annual Meeting of the Cognitive Science Society*.
- Xu, T. L., **Abney, D.H.**, Yu, C. (2017). Discovering Multicausality in the Development of Coordinated Behavior. *The 39th Annual Meeting of the Cognitive Science Society*.

- Slone, L. K., **Abney, D.H.**, Smith, L. B. & Yu, C. (2017). *The Burstiness of Parents' Utterances: Classification of Vocal Temporal Structure during Parent-Child Naturalistic Interaction*. Talk presented at the Society for Research in Child Development Biennial Conference, Austin, TX.
- Abney, D.H.**, Warlaumont, A. S., Oller D.K., Wallot, S., & Kello, C.T. (2016). The multiscale clustering of infant vocalization bouts. Presentation at the International Conference on Infant Studies. New Orleans, LA.
- Perlman, M. & **Abney, D.H.** (2016). Multimodal analysis of the learned vocal repertoire of a human-fostered gorilla. Presentation to be given at the Evolution of Speech workshop at the 2016 EvoLang conference. New Orleans, LA.
- Abney, D.H.** & Balasubramaniam, R. (2015). Introduction and applications to the multiscale coefficient of variation analysis (MSCV). Presentation at the Society for Computers in Psychology. Chicago, IL.
- Abney, D.H.** & Kello, C.T. (2015). Complexity matching in dyadic conversation. Presentation at the 10th Annual Guy Van Orden UConn Workshop on Cognitive and Dynamics. University of Connecticut, Storrs, CT.
- Abney, D.H.**, Warlaumont, A. S., Oller D.K., Wallot, S., & Kello, C.T. (2015). The multiscale clustering of infant vocalization bouts. Presentation at the Society for Complex Systems in Cognitive Science. Minneapolis, MN.
- Abney, D.H.**, Warlaumont, A. S., Oller D.K., Wallot, S., & Kello, C.T. (2015). The multiscale clustering of infant vocalization bouts. Presentation at the International Society of Ecological Psychology. Minneapolis, MN.
- Abney, D.H.** & Kello, C.T. (2014). Measuring multiscale temporal clustering in speech signals. Society for Computers in Psychology. Long Beach, CA.
- Abney, D.H.** (2014). Complexity matching across conversational settings. Finding Common Ground: Social, Ecological, and Cognitive Perspectives on Language Use. University of Connecticut.
- Abney, D.H.**, Kerster, B.E., & Kello, C.T. (2014). Multiscale spatial distributions of eye fixations decouple over time. Presentation at the International Society of Ecological Psychology.
- Abney, D.H.**, & Wagman, J.B. (2014). An information-space analysis of perception of object length by sound. Presentation at the International Society of Ecological Psychology.
- Abney, D.H.** & Kello, C.T. (2013). Dynamics of Social Cognition. Presentation and workshop given by Chris Kello at the National University of Ireland Galway, Complex Systems Research Centre, Dynamical Analyses of Social Behaviour Workshop.

- Abney, D.H.**, Paxton, A., Kello, C.T., & Dale, R. (2013). Complexity matching in dyadic interaction. Presentation at the 17th International Conference of Perception and Action, Lisbon, Portugal.
- Abney, D.H.**, Warlaumont, A. S., Oller D.K., Wallot, S., & Kello, C.T. (2013). The multi-scale dynamics of infants' and caregivers' vocalizations. Presentation at the 3rd meeting of the Society for Complex Systems in Cognitive Science, Berlin, Germany.
- Vinson, D.W., & **Abney, D.H.**, (2013). The influence of linguistic and social information on visual memory. Presentation at the 12th International Cognitive Linguistics Conference. Edmonton, Alberta, Canada.
- Abney, D.H.**, & Wagman, J.B. (2012). Intrinsic feedback in recalibration of length perception. Presentation at the 2011 Illinois Data Conference, Edwardsville, IL.
- Abney, D.H.**, & Wagman, J.B. (2011). Transfer of recalibration across modalities: Feedback on audition improves haptic perception. Presentation at the 2011 Illinois Data Conference, Carbondale, IL.
- Brown, J.W. & **Abney, D.H.** (2010). The biotechnology of technology education: A descriptive investigation of the conceptual foundations of biotechnology necessary for technology education teachers. Presentation at the annual conference of the International Technology and Engineering Education Association, Charlotte, North Carolina.

AWARDS

- 2016 UC Merced GradSLAM Finalist (\$250). *University of California, Merced*
- 2015 Hatano Cognitive Development Research Fellowship (\$1000). *University of California, Merced*
- 2012 Charter Department Graduate Student Excellence Award Department of Psychology, *Illinois State University*
- 2011 Outstanding Psychology Graduate Assistant Award Department of Psychology, *Illinois State University*
- 2010 Rodney L. Custer Graduate Student Research Award Department of Psychology, *Illinois State University*
- 2010 The Donald Maley Spirit of Excellence Outstanding Graduate Student Citation International Technology and Engineering Education Association
- 2010 Graduate Student of the Year. Department of Technology, *Illinois State University*.

PROFESSIONAL AFFILIATIONS

2016-present International Congress of Infant Studies

2014-present International Society for Ecological Psychology

2012-present Psychonomic Society

2012-present Cognitive Science Society

2015-2016 International Environmental Communication Association

2014-2016 Society for Computers in Psychology

2011-2014 Association for Psychological Science

2011-2013 Midwest Psychological Association

2009-2010 International Technology and Engineering Educators Association

TEACHING EXPERIENCE

Instructor of Record, University of Cincinnati

Fall 2019 Developmental Psychology (PSYC 2040)

Teaching Assistant, University of California, Merced

Spring 2016 Complex Adaptive Systems (COGS 104)

Fall 2016 Applied Ethics (PHIL 003),

Spring 2015 Introduction to Language and Linguistics (COGS 005)

Fall 2014 Speech Processing (COGS 151)

Spring 2013 Mind, Brain, & Cognition (COGS 101)

Fall 2012 Mind, Brain, & Cognition (COGS 101)

Instructor of Record, Illinois State University

Fall 2009 Technology and the Quality of Life (TEC 275)

MENTORING

Advisory/Committee Member

2019-Present Sarah Schwab, University of Cincinnati (Master's Thesis)

PROFESSIONAL SERVICE

2015 An Evening on Free Will (Co-organizer) University of California, Merced.

- 2015 Second Annual Symposium on Child and Family. Professional growth event for community child educators University of California, Merced.
- 2013–2015 Undergraduate Cognitive Science Student Association (CSSA) co-founder/representative University of California, Merced.
- 2013 Student research talk organizer, Department of Cognitive and Information Sciences. University of California, Merced.
- 2010 Department Chair search committee (student group), Department of Psychology. Illinois State University.

AD HOC REVIEWING

Academic Journals

Attention, Perception, & Psychophysics
 American Journal of Psychology
 Child Development
 Developmental Science
 Frontiers in Psychology
 Journal of Memory & Language
 Journal of Experimental Psychology: Human Performance and Perception
 New Ideas in Psychology
 Perception
 PLOS One
 Behavior Research Methods
 Ecological Psychology
 American Journal of Speech-Language Pathology
 Mind and Matter
 Memory & Cognition
 Human Movement Science
 Phonetics
 Infant and Child Development
 Chaos, Solitons, and Fractals
 Complexity
 Journal of Vision

Proceedings

Annual Meeting of the Cognitive Science Society (2014, 2015, 2016, 2017, 2018, 2019)
 International Conference on Perception and Action (2015)