

# Drew H. Abney

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## EDUCATION

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### Postdoctoral Fellow

2016-present

Indiana University

Department of Psychological and Brain Sciences

Advisors: Chen Yu & Linda B. Smith

### 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

Dual degrees: Cognitive/Behavioral Sciences & Quantitative Psychology

Illinois State University

Department of Psychology

### 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

## GRANTS

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Sensorimotor foundations of visual attention in infants (*under review*). K99HD098294.

## PUBLICATIONS

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### Peer-Reviewed Journal Articles

\*= *equal contribution*

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

[20] 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.

- [19] 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.
- [18] 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.
- [17] **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.
- [16] **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.
- [15] 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.
- [14] **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.
- [13] **Abney, D.H.**, Warlaumont, A.S., & Kello, C.T. (2015). Production and convergence of multiscale clustering of speech. *Ecological Psychology*. 27(3), 222-235
- [12] **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.
- [11] **Abney, D.H.**, Paxton, A., Kello, C., & Dale, R. (2014). Complexity matching in dyadic interaction. *Journal of Experimental Psychology: General*, 143(6), 2304-2315.
- [10] **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.
- [9] **Abney, D.H.**, McBride, D.M., Conte, A. & Vinson, D.W. (2014). Response dynamics in prospective memory. *Psychonomic Bulletin & Review*. 22(4), 1020-1028
- [8] 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.
- [7] **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.

- [6] **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.
- [5] Wagman, J.B. & **Abney, D.H.** (2013). Is calibration of the perception of length modality-independent? *Attention, Perception, & Psychophysics*. 75(5), 824-829.
- [4] **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.
- [3] 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.
- [2] 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.
- [1] 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***

- [M.2] Slone, L., **Abney, D.H.**, Borjon, J.I., Chen, C., Franchak, J.M., Percy, D., Suarez-Rivera, C., Xu, L., Zhang, Y., Smith, L.B., Yu, C. (*in press*). Head-mounted eye-tracking of children's dynamic visual attention during naturalistic behavior. *Journal of Visualized Experiments*.
- [M.1] Borjon, J.I., Schroer, S., Bambach, S., Slone, L., **Abney, D.H.**, Crandall, D., Smith, L.B. (*in press*). Capturing the egocentric view of infants and toddlers with head-mounted cameras. *Journal of Visualized Experiments*.

### ***Manuscripts under revision/review***

- Slone, L.K., **Abney, D.H.**, Smith, L.B., Yu, C. (*under revision*). Bursty distributions of parent speech predict toddler word learning. *Proceedings of the National Academy of Sciences*.
- Abney, D.H.**, Suanda, S., Smith, L.B., Yu, C. (*under revision*). What are you looking at? Why parent-infant coordinated attention predicts later vocabulary. *Child Development*.

## ***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***

**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 the writing stage)***

**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 Developmental Science*.

**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*.

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*.

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*.

## **PRESENTATIONS**

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### ***Invited Talks***

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.

***Oral Presentations (2017-present; 26 total)***

- 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. *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*.
- 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.

## **AWARDS**

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- 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**

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- 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**

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### ***Instructor of Record***

Technology and the Quality of Life (TEC 275)

### ***Teaching Assistant***

Complex Adaptive Systems (COGS 104), Applied Ethics (PHIL 003), Introduction to Language and Linguistics (COGS 005), Speech Processing (COGS 151), Mind, Brain, & Cognition (COGS 101)

## **PROFESSIONAL SERVICE**

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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

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### *Academic Journals*

Attention, Perception, & Psychophysics; American Journal of Psychology; 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

### *Proceedings*

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

## REFERENCES

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Christopher T. Kello  
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University of California, Merced  
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