

Curriculum Vitae, 9/19/2017

Lindsey Engle Richland

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EDUCATION

Princeton University	Anthropology	B.A., <i>cum laude</i> , 1998
University of California, Los Angeles	Developmental Psychology	M.A. 2000 Ph.D 2003
University of California, Los Angeles	Cognitive Psychology	Postdoctoral Research 2003-2005

ACADEMIC POSITIONS

July 2014 - current	<i>Associate Professor:</i> Primary Appointment: Dept. of Comparative Human Development, Associate Appointments: Committee on Education, and Dept. of Psychology (Developmental Area), University of Chicago
2011-2014	<i>Assistant Professor:</i> Primary Appointment: Dept. of Comparative Human Development, University of Chicago
7/05-2011	<i>Assistant Professor</i> Primary Appointment: Department of Education, (Program in Learning, Cognition and Development); University of California, Irvine Courtesy Appointment: Department of Psychology and Social Behavior, University of California, Irvine

GRANTS

\$1,394,000	Principal Investigator: Drawing Connections to Close Achievement Gaps in Mathematics, <i>Institute of Education Sciences</i> (2017-2021).
\$50,000	Learning Mathematics Under Pressure. <i>Spencer Foundation</i> (2017-2018).
\$299,988	Principal Investigator, An Instructional Complexity Approach to the Science of Learning by Analogy. <i>National Science Foundation</i> (2015-2017).
\$1,550,000	Co-Principal Investigator, Environmental & Biological Variation and Language Growth. <i>National Institutes of Health</i> . (2014-2019).
\$120,000	Principal Investigator, Assessing 21 st Century Skills for Urban Youth. <i>Milgrom Family Support Group</i> (2013-2016).
\$695,220	Principal Investigator, CAREER: Learning to Make Mathematical Connections <i>National Science Foundation</i> : (2010-2015).
\$40,000	Principal Investigator, The Interaction of Social Stress and Testing Effects: <i>The Spencer Foundation</i> (2011-2012).

- \$200,000 Co-Principal Investigator, National Science Foundation: *Computational Metaphor Identification for Supporting Creativity in Science Education* (2008-2010).
- \$450,000 Co-Principal Investigator, Analogical Reasoning: Integration of Neural, Behavioral and Computational Analyses: *Office of Naval Research*: (2008-2011).
- \$300,000 Co-Principal Investigator, Institute of Education Sciences, Cognition and Student Learning: *A Multidisciplinary Study of Analogical Transfer in Children's Mathematics Learning* (2003-2006).

HONORS AND AWARDS

- 2015 Fellow, Salzburg Global Seminar
- 2008-2010 National Academy of Education/ Spencer Foundation Postdoctoral Fellowship
- 2008-2009 University of California, Irvine Faculty Career Development Award
- 2008-2009 Committee on Research, Computing, and Library Resources Award
- 2002-2003 Spencer Foundation Dissertation Fellowship #200300018
- 2000-2001 National Institute of Mental Health Developmental Cognitive Science Training Fellowship
- 1999-2000 SEEDS Urban Education Study Center Fellowship, UCLA

PUBLICATIONS

Journal Articles

- *Begolli, K.N., Richland, L.E., Lyons, E., Klostermann, E., Jaeggi, S. M., Matlen, B. (pending final revisions), Executive Function in Relational Reasoning: Incorporating Everyday Classrooms into the Science of Learning. *Thinking and Reasoning*.
- *Lyons, E., *Simms, N., *Begolli, K.N., Richland, L.E. (in press), Stereotype Threat Effects on Learning from a Cognitively Demanding Mathematics Lesson, *Cognitive Science*.
- *Frausel, R., *Simms, N., Richland, L. E. (2018), Working Memory Predicts Children's Analogical Reasoning, *Journal of Experimental Child Psychology*, 166, 160–177.
- *Begolli, K.N., & Richland, L. E. (2017), Bridging Cognitive Science and Real Classrooms: A Video Methodology for Experimental Research in Education. *Journal of Experimental Education*, p. 1-19 <http://dx.doi.org/10.1080/00220973.2017.1347775>.
- *Schenke, K., Richland, L. E. (2017), Preservice Teachers' Use of Contrasting Cases in Mathematics Instruction, *Instructional Science*. pp. 1-19, *doi:10.1007/s11251-017-9408-2*.
- Richland, L. E., Begolli, K.N., Simms, N., Frausel, R.R. Lyons, E. A. (2016), Supporting mathematical discussions: The roles of comparison and cognitive load, *Educational Psychology Review*. p.1-13. DOI 10.1007/s10648-016-9382-2.
- *Begolli, K.N., Richland, L.E. (2016) Analog visibility as a double-edged sword. *Journal of Educational Psychology*. 108(2), 194-213, 1. DOI: 10.1037/edu0000056.
- *Student or Postdoctoral First Author*

- Richland, L. E. & Begolli, K.N. (2016). Analogy and higher-order thinking: Learning mathematics as an example. *Policy Insights from the Behavioral and Brain Sciences (PIBBS)*, Vol. 3(2) 160–168, DOI: 10.1177/2372732216629795.
- Richland, L. E., Simms, N. (2015), Analogy, higher order thinking, and education, *Wiley Interdisciplinary Reviews: Cognitive Science*, 6(2), 177-192.
- Richland, L.E. (2015). Cross-cultural differences in linking gestures during instructional analogies, *Cognition and Instruction*, 33:4, 295-321, DOI: 10.1080/07370008.2015.1091459.
- *Vendetti, M., *Matlan, B., Richland, L., Bunge, S. (2015). Analogical reasoning in the classroom: Insights from cognitive science. *Mind, Brain, and Education*, 9(2), 100–106.
- *Rutherford, T., Farkas, G., Duncan, G., Burchinal, M., *Kibrick, M., Graham, J., Richland, L.E., Tran, N. A., Schneider, S. H., Duran, L. Martinez, M. E. (2014). A randomized trial of an elementary school mathematics software intervention: Spatial-temporal mathematics. *Journal of Research on Educational Effectiveness*, 7(4), 358-383.
- Richland, L. E., Burchinal, M. (2013). Early executive function predicts reasoning development, *Psychological Science*, 24, 87-92.
- Richland, L.E, Hansen, J. (2013). Reducing cognitive load in learning by analogy. *International Journal of Psychological Studies*, 5(4), 69-80.
- Richland, L. E., Stigler, J. W., Holyoak, K. J. (2012). Teaching the conceptual structure of mathematics, *Educational Psychologist*, 47(3), 189-203.
- Tran, N. A.; Schneider, S., Duran, L., Conley, A.M., Richland, L.E., Burchinal, M., Rutherford, T., Kibrick, M., Osborne, K., Coulson, A., Anetenore, F., Daniels, A., Martinez, M. E. (2012). The effects of mathematics instruction using spatial temporal cognition on teacher efficacy and instructional practices. *Computers in Human Behavior*, 28, 340-349.
- Morrison, R.G., Dumas, L.L., Richland, L. E. (2011). A computational account of children's analogical reasoning: Balancing inhibitory control in working memory and relational representation. *Developmental Science*, 14(3), 516–529.
- Richland, L. E., Morrison, R. G. (2010). Is analogical reasoning just another measure of executive functioning? General Commentary. *Frontiers of Human Neuroscience*, 4, 1-2.
- Richland, L. E., Chan, T-K. Morrison, R. G., & Au, T. K-F (2010), Young children's analogical reasoning across cultures: Similarities and differences. *Journal of Experimental Child Psychology*. 105, 146–153.
- Richland, L.E., & McDonough, I. M. (2010). Learning by analogy: Discriminating between potential analogs. *Contemporary Educational Psychology*, 35, 28-43.
- Richland, L.E., Kornell, N., & Kao, S.L. (2009). The pretesting effect: Do unsuccessful retrieval

attempts enhance learning? *Journal of Experimental Psychology: Applied*, 15(3), 243-257.

Richland, L.E. (2008). Ethnography and cognitive psychology: Shared dilemmas of the local and unlocatable. *Political and Legal Anthropological Review*, 31(1), 76-88.

Doumas, L.A.A., & Richland, L.E. (2008). Developing structured representations, (Commentary on Leech, Mareschal & Cooper). *Behavioral and Brain Sciences*, 31(4), 384-385.

Richland, L.E., Zur, O., & Holyoak, K. (2007). Cognitive supports for Analogies in the mathematics classroom. *Science*, 316, 1128-1129.

Richland, L.E., Morrison, R.G., & Holyoak, K.J. (2006). Children's development of analogical reasoning: Insights from scene analogy problems. *Journal of Experimental Child Psychology*, 94, 249-273.

Richland, L.E., Holyoak, K.J., & Stigler, J. W. (2004). Analogy generation in eighth-grade mathematics classrooms. *Cognition and Instruction*, 22(1), 37-60.

Book Chapters and Reviews

Richland, L. E., Begolli, K.N., Näslund-Hadley, E. (2017). The development of mathematical cognition. In E. Arias Ortiz, J. Cristia, and S. Cueto (Eds.), *What are the main challenges for Mathematics Learning in LAC?* Washington, DC: Inter-American Development Bank.

Richland, L. E. (2017), Learning, Science, and Cutting Edge Methodology, Review of The Cambridge Handbook of the Learning Sciences, 2nd Edition, *American Journal of Psychology*. Vol. 130(2), pp. 249-254.

Richland, L.E., Frausel, R., Begolli, K. (2016), Cognitive Development. *Sage Encyclopedia of Theory in Psychology*. H. Miller (Ed), Sage Publications, Inc. pp142-146.

Richland, L. E., Frausel, R. (2015), Mathematics in the early years: Bringing active, hands-on learning to the region's classrooms. In E. Näslund-Hadley (Ed), *All Children Counting, Early Mathematics and Science Education in Latin America and the Caribbean*, pp. 22-50.

Holyoak, K. J., & Richland, L. E. (2014). Using analogies as a basis for teaching cognitive readiness. In H. F. O'Neil, R. S. Perez, & E. L. Baker (Eds.), *Teaching and Measuring Cognitive Readiness* (pp. 223-238). New York: Springer.

Richland, L.E. (2010). The development of learning by analogy. In N. L. Stein & S. Raudenbush (Eds.), *Developmental science goes to school*. New York, NY: Routledge.

*Baumer, E. B.; Tomlinson, W. T.; Richland, L. E. (2009). Computational Metaphor Identification: A Method for Identifying Conceptual Metaphors in Written Text. In B. Kokinov, K. Holyoak, D. Gentner. (Eds.) *New Frontiers in Analogy Research*. Sofia, Bulgaria: New Bulgarian University Press.

Richland, L.E., Bjork, R.A., & Linn, M.C. (2007). Cognition and instruction: Bridging laboratory and classroom settings. In F. Durso, R. Nickerson, S. Dumais, S. Lewandowsky & T. Perfect (Eds). *Handbook of Applied Cognition, 2nd ed* (pp. 555-584). Chichester, England: John Wiley.

Peer Reviewed Conference Proceedings

- *Silvey, C., Gentner, D., Richland, L. E., Goldin-Meadow, S. (2017), Children's specific comparisons from 26 to 58 months predict performance in verbal and non-verbal analogy tests in 6th grade, *Proceedings of the Thirty-Ninth Annual Cognitive Science Society Meeting, London, England.*
- *Begolli, K.N., Richland, L. E., Jaggi, S. (2015), The role of executive functions for structure mapping in mathematics. In Noelle, D. C., Dale, R., Warlaumont, A. S., Yoshimi, J., Matlock, T., Jennings, C. D., & Maglio, P. P. (Eds.) *Proceedings of the 37th Annual Meeting of the Cognitive Science Society.* Austin, TX: Cognitive Science Society.
- *Begolli, K. N., Richland, L. E. (2013). Visual support for instructional analogy: Context matters. *Proceedings of the Thirty-Fifth Annual Conference of the Cognitive Science Society.* Mahwah, NJ: Lawrence Erlbaum.
- Richland, L. E., & Richland, J. R. (2013). The language of everyday verbal analogies. *Proceedings of the Thirty-Fifth Annual Conference of the Cognitive Science Society.* Mahwah, NJ: Lawrence Erlbaum.
- Doumas, L. A. A., Morrison, R. G., & Richland, L. E. (2010). Differences in development of analogy across cultures: A computational account. *Proceedings of the Thirty-Second Annual Conference of the Cognitive Science Society.* (pp. 2338-2343). Mahwah, NJ: Erlbaum.
- Doumas, L. A. A., Morrison, R. M., & Richland, L.E. (2009). The development of analogy: Working memory in relational learning and mapping. In N. Taatgen and H. van Rijn (Eds.), *Proceedings of the Thirty-first Annual Conference of the Cognitive Science Society* (pp. 3133-3138). Austin, TX: Cognitive Science Society.
- *Baumer, E., Richland, L.E., & Tomlinson, W.T. (2009). Applying computational metaphor identification to middle school students' writing about cellular reproduction. *Proceedings of the National Association of Research In Science Teaching Meeting.* Garden Grove, CA.
- Richland, L.E., Bjork, R.A., Finley, J.R., & Linn, M.C. (2005). Linking cognitive science to education: Generation and interleaving effects. In B. G. Bara, L. Barsalou & M. Bucciarelli (Eds.), *Proceedings of the Twenty-Seventh Annual Conference of the Cognitive Science Society.* Mahwah, NJ: Lawrence Erlbaum.

PUBLIC DISSEMINATION

The content of several publications above have been featured in public dissemination forums, including Scientific American, the APS Observer, as well as newspapers and blogs in the U.S. and Internationally (Hong Kong, England).

PROFESSIONAL MEMBERSHIPS

Fellow: Psychonomics Society. Member: Society for Research in Child Development, Cognitive Development Society, Behavioral and Brain Sciences Associate, American Psychological Society, American Education Research Association

PROFESSIONAL AND PUBLIC SERVICE

Special Issue Associate Editor: Analogy and Mathematics: *Thinking and Reasoning*.

Conference Organizer and Scientific Committee Member, 4th International Conference on Analogy, Paris, France.

Advisory Board Member

- Advisory Board Member: *Digital Games as Analogical Sources for Science Learning*. NSF (PI: Wendy Martin).
- Advisory Board Member: "Comparison and Explanation of Multiple Strategies" NSF (Harvard University, PI: Jon Star; Vanderbilt, Bethany Rittle-Johnson).
- Advisory Board Member: "Spatial Alignment in Mathematics." IES (Northwestern: Dedre Gentner; Bryan Matlen, WestEd).

University Service

- Chair of the Social and Behavioral Sciences IRB, University of Chicago (2016-2019)
- Chair: Departmental Self-Study, Comparative Human Development, University of Chicago
- CHD Director of Undergraduate Studies (2016-2017)
- CHD Committee on the Status of Women in the University (2015-2017)
- Committee on Education, Member (2012 – ongoing)
- Urban Teacher Education Program Advisory Board Committee (2012 – ongoing)
- Social and Behavioral Sciences IRB Member (2013-2016)
- CHD Student Aid Committee Chair (2014-2016)
- CHD Graduate Student Affairs Representative (2012 – 2015)
- CHD Faculty Search Committee (2013-2014)
- CHD Admissions Committee (2012 - 2014)
- CHD Student Awards Committee (2012 – 2014)
- CHD Colloquium Series Director (2013 – 2014)
- Previous institution, UC Irvine:
 - Ph.D Admissions Committee (2008-2011)
 - MAT and Credential Steering Committee (2007-2011)
 - Math/ Science Search Committee (2007-2011)

- Member, Department of Education Steering Committee; Alternate Representative to the UCI Divisional Assembly of the Academic Senate (2006-2008)
- Learning, Cognition, Development Search Committee (2006-2007) (two hires)

Task Material Development

- The Scene Analogy task (Richland et al, 2006) has been used by developmental and neuropsychological researchers across the United States as well as internationally including in England, China, Turkey, the Netherlands, and Australia.

Editorial Work and Professional Service

- Editorial Board Member: *Journal of Educational Psychology*
- 2nd & 3rd International Conference on Analogical Reasoning, 2009, 2013, Scientific Program Committee Member, held in Sofia Bulgaria, Dijon, Fr., and Paris, Fr.
- SRCD's Patrice L. Engle Dissertation Grant For Global Early Child Development: Standing Review Committee Member
- Institute of Education Sciences: Basic Processes, standing grant review panel member
- Reviewer, National Academy of Science Report on Discipline-Based Education Research.
- Ad hoc Reviewer: *Psychological Science; Cognition; Quarterly Journal of Experimental Psychology; Child Development; Journal of Experimental Child Psychology; Cognitive Development; Developmental Psychology; Psychonomic Bulletin and Review; Journal of Experimental Psychology: Applied; Language Learning and Development; Cognitive Science; Learning and Individual Difference; Learning and Instruction; Frontiers in Human Neuroscience; Developmental Neuropsychology*
- National Science Foundation: recurrent review panelist and ad hoc reviewer
- Israel Science Foundation: ad hoc reviewer
- Conference Reviewer: Society for Research in Child Development; Society for Research on Educational Effectiveness, Cognitive Science Society, Cognitive Development Society

TEACHING

UNIVERSITY OF CHICAGO

- Developmental Psychology (Undergraduate)
- Introduction to Human Development (Undergraduate)
- The Mind (Undergraduate)
- Reasoning Development (Graduate)
- Cognition and Education (Graduate)
- Seminar on Learning to Teach (Graduate – for Teaching certificate)

UNIVERSITY OF CALIFORNIA, IRVINE

- Cognition and Learning in Educational Settings (Undergraduate)
- Child Development in Education (Undergraduate)
- Cognitive Development (Graduate)
- Advanced Concepts in Cognition (Pre-service Teachers: coursework for Credential with Masters in Teaching)