

Raedy Ping, PhD

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Academic Appointments

Northwestern University
School of Education and Social Policy
Postdoctoral Researcher
2017-current

Loyola University Chicago
Department of Psychology
Instructor
2014-2017

University of Chicago
Spatial Intelligence + Learning Center
Director of Education Research
2010-2014

Consulting Experiences

Center for Elementary Mathematics +
Science Education
Everyday Math Curriculum Consultant
2010-2013

Urban Education Institute +
Ounce of Prevention Fund
Birth-to-College Partnership
Case Study Author
2009-2011

University of Illinois-Chicago
Learning Sciences Research Institute
Visiting Research Specialist
2008-2009

Education

University of Chicago, PhD
Psychology, 2009

Indiana University, BA
Psychology + East Asian Languages, 2003

Publications

- Wakefield, E.M., Foley, A., Ping, R., Villarreal, J., Goldin-Meadow, S. & Levine, S.C. (2019).
Breaking down gesture and action in mental rotation: Understanding the components of
movement that promote learning. *Developmental Psychology*. doi: 10.1037/dev/0000697
- Mix, K., Levine, S.C., Cheng., Y.-L., Young, C., Hambrick, D.Z., Ping, R., & Konstantopoulos, S.
(2016). Separate but correlated: The latent structure of space and mathematics across
development. *Journal of Experimental Psychology: General*, 145(9), 1206-1227. doi:
10.1037/xge0000182
- Gentner, D., Levine, S.C., Ping, R., Isaia, A. Dhillon, S., Bradley, C. & Honke, G. (2016).
Rapid learning in a children's museum via analogical comparison. *Cognitive Science*, 40,
224-240. doi: 10.1111/cogs.12248
- Smith, L., Ping, R., Miller, B.J., Goldwater, M.B., Gentner, D. & Levine, S.C. (2014).
Mechanisms of spatial learning: Teaching children geometric categories. *Lecture Notes
in Artificial Intelligence*, 8684, 325-337. doi: 10.1007/978-3-319-11215-2_23
- Ping, R., Goldin-Meadow, S. & Beilock, S. Understanding gesture: Is the listener's motor system
involved? (2014). *Journal of Experimental Psychology: General*, 143(1), 195-204.
doi: 10.1037/a0032246

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- Ping, R., Decatur, M., Larson, S.W., Zinchenko, E. & Goldin-Meadow, S. (2012). Gesture-speech mismatch predicts who will learn to solve an organic chemistry problem. *Proceedings of the Annual Meeting of the American Educational Research Association*.
- Radinsky, J., Ping, R., Hospelhorn, E. & Goldman, S. (2012). Making the absent present: Improvised representational fields in students' negotiations of meaning with GIS (Geographic Information System) Tools. *Proceedings of the Annual Meeting of the American Educational Research Association*.
- Ping, R., Ratliff, K., Hickey, E. & Levine, S. (2011). Using manual rotation and gesture to improve mental rotation in preschoolers. In L. Carlson, C. Hölscher & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society* (pp. 459-464). Austin, TX: Cognitive Science Society.
- Ping, R.M. & Goldin-Meadow, S. (2010). Gesturing saves cognitive resources when talking about non-present objects. *Cognitive Science*, 34(4), 602-619.
doi: 10.1111/j.1551-6709.2010.01102.x
- Radinsky, J., Goldman, S., Doherty, R. & Ping, R. M. (2010). Small group argumentation with visual data: Negotiating what is seen and what it means. *Proceedings of the Annual Meeting of the American Educational Research Association*.
- Ping, R.M., Nash, R. & Wing, L. (2010). Working together to build a birth-to-college approach to public education: Teaching Case Study commissioned by Urban Education Institute and Ounce of Prevention.
- Ping, R.M., Dhillon, G.S. & Beilock, S.L. (2009). Reach for what you like: The body's role in shaping preferences. *Emotion Review*, 1(2), 140-150. doi: 10.1177/1754073908100439
- Ping, R.M. & Goldin-Meadow, S. (2008). Hands in the air: Using ungrounded iconic gestures to teach children conservation of quantity. *Developmental Psychology*, 44(5), 1277-1287.
doi: 10.1037/0012-1649.44.5.1277
- Ping, R.M. & Goldin-Meadow, S. (2006). Gesturing in the air: Children learn from gestures not grounded in the here-and-now. In R. Sun & N. Miyake (Eds.), *Proceedings of the 26th Annual Meeting of the Cognitive Science Society* (pp. 675-678). Austin, TX: Cognitive Science Society.
- Yoshida, H., Smith, L.B., Ping, R.M. & Davis, E.L. (2002). How are speech and gesture related? In W. Gray & C. Schunn (Eds.), *Proceedings of the 24th Annual Meeting of the Cognitive Science Society* (pp. 966-969). Austin, TX: Cognitive Science Society.

Publications in Progress

Ping, R., Church, R.B., Decatur, M-A., Larson, S.W., Zinchenko, E. & Goldin-Meadow, S. (under

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revision). Unpacking the gestures of chemistry learners: What the hands tell us about correct and incorrect conceptions of stereochemistry. *Discourse Processes*.

Paper Presentations

Gentner, D., Goldwater, M.B., Levine, S.C., Ping, R., Isaia, A., Honke, G. & Bradley, C. (2015). Spatial learning and spatial comparison combine to support children's learning. The 6th International Conference on Spatial Cognition, Rome.

Levine, S.C., Ping, R., Petersen, L.A., Khetarpal, N., Pruden, S.M., Schiffman, J. & Pinchuk, R. (2015). Variations in parents' spatial language predict children's spatial skill: Relation to child gender. The 6th International Conference on Spatial Cognition, Rome.

Ping, R., Schiffman, J., Khetarpal, N. & Levine, S.C. (2015). Putting the pieces together: Parent spatial language scaffolding for boys and girls during puzzle play. Biennial Meeting of the Society for Research in Child Development, Philadelphia.

Ping, R., Goldin-Meadow, S. & Stieff, M. (2014). Gestures reflect and shape knowledge in complex organic chemistry tasks. International Society for Gesture Studies Conference, San Diego.

Ping, R., Khetarpal, N., Schiffman, J. & Levine, S.C. (2014). A systematic investigation of parent scaffolding during spatial play for boy and girl children. NSF Inter-Science of Learning Center Conference, Pittsburgh.

Matlen, B.J., Smith, L.A., Ping, R., Goldwater, M.B., Levine, S.C. & Gentner, D. (2013). Comparison and contrast in young children's shape categorization. 6th Annual Inter-Science of Learning Center Student and Postdoc Annual Conference, Philadelphia.

Ping, R., Young, C.J., Ratliff, K., Schiffman, J. & Levine, S.C. (2012). Tracing the development of cross-sectioning ability in three- to nine-year old children. The 5th International Conference on Spatial Cognition, Rome.

Gentner, D., Levine, S. C., Goldwater, M. & Ping, R. (2012). Spatial alignment and spatial language contribute to learning about engineering. The 5th International Conference on Spatial Cognition, Rome.

Goldin-Meadow, S., Ping, R., Decatur, M., Larson, S. & Zinchenko, E. (2012). Gesture predicts readiness-to-learn in adults learning a complex spatial task. The 5th International Conference on Spatial Cognition, Rome.

Levine, S.C., Congdon, E., Kwon, M. & Ping, R. (2012). The role of embodiment in children's understanding of units of measure. The 5th International Conference on Spatial Cognition, Rome.

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- Gunderson, E.A., Ping, R., Ramirez, G., Bradley, C., Beilock, S.L. & Levine, S. C. (2012). Teacher spatial anxiety: Consequences and relief. Annual Convention of Association for Psychological Science, Chicago.
- Ping, R., Decatur, M., Larson, S.W., Zinchenko, E. & Goldin-Meadow, S. (2012). Gesture-speech mismatch predicts who will learn to solve an organic chemistry problem. Annual Meeting of the American Educational Research Association, Vancouver.
- Radinsky, J., Ping, R., Hospelhorn, E. & Goldman, S. (2012). Making the absent present: Improvised representational fields in students' negotiation of meaning with GIS. Annual Meeting of the American Educational Research Association, Vancouver.
- Ping, R., Ratliff, K., Hickey, E. & Levine, S. (2011). Using manual rotation and gesture to improve mental rotation in preschoolers. 33rd Annual Conference of the Cognitive Science Society, Boston.
- Ping, R., Larson, S., Decatur, M., Zinchenko, E. & Goldin-Meadow, S. (2011). The relationship between gesture and speech predicts who will learn to solve an organic chemistry problem. 4th Annual Inter-Science of Learning Center Student and Postdoc Conference, Washington, DC.
- Ping, R.M., Dhillon, G.S. & Beilock, S.L. (2008). The motor system's role in object preference. Annual Meeting of the Midwestern Psychological Association, Chicago.
- Ping, R.M. & Goldin-Meadow, S. (2006). Gesturing in the air: Children learn from gestures not grounded in the here-and-now. Annual Meeting of the Cognitive Science Society, Vancouver.

Posters

- Kazi, M., Brylak, J., Church, R.B., Dupaya, K., Parrill, F., Ping, R., & Rutsum, H. (2016). The effect of action-based instruction on learning a chemistry concept. Association for Psychological Science Annual Convention, Chicago.
- Cheng, Y.-L., Mix, K., Levine, S.C., Young, C. & Ping, R. (2013). The relationships between space and math: A MIMIC model approach. Biennial meeting of the Cognitive Development Society, Memphis.
- Smith, L., Ping, R.M., Goldwater, M.B., Matlen, B.J., Levine, S.C. & Gentner, D. (2013). Comparison and contrast in young children's shape categorization. Annual meeting of the Cognitive Science Society, Berlin.
- Ping, R.M., Bradley, C., Rayman-Kinney, J. & Levine, S.C. (2013). Parent use of spatial language with boy and girl children during puzzle play. Society for Research in Child Development Biennial Meeting, Seattle.

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- Smith, L., Ping, R.M., Goldwater, M., Matlen, B., Levine, S.C. & Gentner, D. (2013). Comparison and contrast in young children's shape categorization. Society for Research in Child Development Biennial Meeting, Seattle.
- Congdon, E.L., Kwon, M.K., Ping, R., & Levine, S.C. (2012). The efficacy of using gesture versus objects in improving children's understanding of linear measurement. The 5th International Society for Gesture Studies Conference, Lund.
- Congdon, E.L., Gibson, D., Ping, R.M. & Levine, S.C. (2012). Spatial language and early geometry: Using mutual exclusivity to teach young children about angles. Inter-Science of Learning Centers Conference, San Diego.
- Ping, R.M., Bradley, C., Gunderson, E.A., Ramirez, G., Beilock, S.L., Levine, S. C. (2011). Alleviating anxiety about spatial ability in elementary school teachers. 33rd Annual Conference of the Cognitive Science Society, Boston.
- Ping, R.M., Larson, S., Decatur, M., Zinchenko, E. & Goldin-Meadow, S. (2011). The relationship between gesture and speech predicts who will learn to solve a chemistry problem. 33rd Annual Conference of the Cognitive Science Society, Boston.
- Hickey, E., Bradley, C., Krakowski, M., Ratliff, K. R., Gomez, L. M., Ping, R., & Levine, S. C. (2011). Using teacher work circles to improve spatial learning in the classroom. Biennial Meeting of the Society for Research in Child Development, Montreal.
- Congdon, E.L., Kwon, M., Ping, R. & Levine, S.C. (2011). The Role of gesture versus action in improving children's understanding of linear measurement. The Biennial Cognitive Development Society Conference.
- Larson, S., Ping, R.M., Zinchenko, E., Decatur, M. & Goldin-Meadow, S. (2010). Adult gesture-speech mismatch predicts learning on a mental rotation task. International Conference for Spatial Cognition, Mt. Hood, Oregon.
- Ping, R.M. & Goldin-Meadow, S. (2009). Gesturing lightens the cognitive load of talking about non-present objects. Biannual Meeting of the Society for Research in Child Development, Denver.
- Ping, R.M., Dhillon, G.S. & Beilock, S.L. (2008). The motor system's role in object likeability. Annual Convention of the Association for Psychological Science, Chicago.
- Ping, R.M., Goldin-Meadow, S., Santana, H.C., Jr. & Sarfaty, A.E. (2008). Gesturing saves cognitive resources for children speaking about present or absent objects. Annual Convention of the Association for Psychological Science, Chicago.
- Ping, R.M., Goldin-Meadow, S. & Decatur, M.V. (2007) Gesture, cognitive load, and non-visible objects. Biannual Meeting of the Society for Research in Child Development, Boston.

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Reviews

Child Development, Cognition, Cognition & Instruction, Cognitive Science, Cognitive Processing, Developmental Psychology, Gesture, Journal of Experimental Child Psychology, Journal of Nonverbal Behavior, Psychological Science, Psychonomic Bulletin & Review, Quarterly Journal of Experimental Psychology, TopiCS

Courses Taught

Developmental Psychology, Research Methods in Psychology, Labs in Developmental or Cognitive Psychology, Psychological Statistics, Cognitive Psychology, Educational Psychology

Honors / Awards

David Marr Prize-Nominated Paper, Cognitive Science Society	2002
National Institutes of Health Developmental Psychology Training Grant	2004-2007
Century Fellowship for Graduate Study	2003-2004
Student Undergraduate Research Fellowship	2001-2003
Doolittle Graduate Research Travel Award	2006
Cognitive Science Society Travel Award	2006
Psychology Graduate Student Organization Peer Award for Travel	2006-2007

Invited Talks

Department of Psychology, Binghamton University (State Univ of New York)
Developmental Psychology Program, Loyola University Chicago
Developmental Psychology Seminar, University of California-Riverside
Child Development Program, California State University-Dominguez Hills
Spatial Analogy and Language Learning Group, Northwestern University
Spatial Intelligence Learning Group, Temple University
Spatial Learning in Early Math Invited Lecture Series, *Everyday Mathematics*,
Center for Elementary Mathematics and Science Education, Chicago
Graduate Student Parent Group, University of Chicago
Math Curriculum Group meetings, Parkwood Elementary School