

NORA S. NEWCOMBE

Home:

508 Howe Road
Merion, PA 19066

Office Address:

1701 N. 13th Street, Room 318
Dept of Psychology
Temple University
Philadelphia PA 19122-6085

Contact:

newcombe@temple.edu
<http://sites.temple.edu/newcombe/>

Education

Ph.D. 1976, Harvard University, Cambridge, Massachusetts.
B.A. 1972, Antioch College, Yellow Springs, Ohio.

Employment

2014- Laura H. Carnell Professor, Temple University
2003- James H. Glackin Distinguished Faculty Fellow, Temple University
1987- Professor, Department of Psychology, Temple University.
Director, Undergraduate Studies, 1981-86; Associate Chair, 1986-89;
Director, Cognitive Division, 1995-99; Coordinator, Cognitive Neuroscience, 2008-12.
1981-87 Associate Professor, Department of Psychology, Temple University.
1976-81 Assistant Professor, Department of Psychology, The Pennsylvania State University.

Other Appointments

2018- Adjunct Professor, University of Canberra
2014-15 Visiting Scholar, Center for Cognitive Neuroscience, University of Pennsylvania.
2003-04 Visiting Scholar, Spatial Cognition Group, Wissenschaftskolleg, Berlin
1999-00 Visiting Scholar, Department of Psychology, Princeton University.
1993-94 Visiting Scholar, Department of Psychology, University of Pennsylvania.
1986-87 Visiting Scholar, Department of Psychology, University of Pennsylvania.

Honors

2026 Award for Distinguished Scientific Contributions, American Psychological Association
2026 Attneave Lecture, University of Oregon
2025 Bower Lecture, Stanford University
2025 John P. McGovern Award Lecture, American Association for the Advancement of Science
2025 David E. Rumelhart Prize, Cognitive Science Society
2024 Elected to the National Academy of Sciences
2023 Mentor Award, Division 7 (Developmental), American Psychological Association
2023 Mentor Award, Association for Psychological Science
2023 Anderson Lecture, UC-San Diego
2022 Gibson Lecture, Cornell University
2021 Ernest R. Hilgard Lifetime Achievement Award, Division 1 (Society for General Psychology), American Psychological Association
2021 Golledge Lecture, UC-Santa Barbara
2020 Baltes Lecture, Max Planck Institute-Berlin
2020 Clifford T. Morgan Distinguished Leadership Award, Psychonomic Society
2019 Howard Crosby Warren Medal, Society of Experimental Psychologists
2017 William Evans Fellowship, University of Otago, New Zealand
2016 Research and Creative Achievement Award, Temple University

- 2015 Distinguished Scientific Contributions Award, Society for Research in Child Development
 2014 William James Fellow Award, Association for Psychological Science
 2014 George A. Miller Award for an Outstanding Recent Article in General Psychology, Division 1 (Society for General Psychology), American Psychological Association (2nd time won)
 2011 Keynote Speaker, Psychonomic Society
 2010 Invited Participant, Ernst Strüngmann Forum, Frankfurt, Germany
 2008 APS Student Council Champion of Psychology
 2008 Elected to the Society of Experimental Psychologists
 2007 G. Stanley Hall Award for Distinguished Contribution to Developmental Psychology, Division 7 (Developmental Psychology), American Psychological Association
 2006 Elected to the American Academy of Arts and Sciences, Cambridge, MA
 2006 Award for Distinguished Service to Psychological Science, American Psychological Association
 2006 Women in Cognitive Science Mentorship Award
 2006 G. Stanley Hall Lecturer, Division 2 (Teaching), American Psychological Association
 2004 Paul W. Eberman Faculty Research Award, Temple University
 2004 George A. Miller Award for an Outstanding Recent Article in General Psychology, Division 1 (Society for General Psychology), American Psychological Association
 1999 James McKeen Cattell Fellowship
 Fellow, American Association for the Advancement of Science; American Psychological Association, Divisions 1 (General Psychology), 3 (Experimental), 7 (Developmental) and 35 (Psychology of Women); Association of Psychological Science; Cognitive Science Society; Psychonomic Society

External Funding

Research Grants as PI

- 2023-27 NSF: Reasoning about Spatial Relations and Distributions: Supporting STEM Learning in Early Adolescence
- 2020-25 NICHD: Mapping the Development of Episodic Memory
 • 2021-23, NICHD: Diversity Supplement to Kim Nguyen
- 2020-24 NSF: Collaborative Research: Paving the Way for Fractions: Identifying Foundational Concepts in First Grade
- 2017-20 NSF: Exploring Links between STEM Success and Spatial Skills
 • 2018-20, NSF: Supplement from Integrative Strategies for Understanding Neural and Cognitive Systems
- 2011-16 NSF: Spatial Intelligence and Learning Center (SILC)
 • 2012-16, NSF: SAVI, Thematic Network in Spatial Cognition
- 2006-11 NSF: Spatial Intelligence and Learning Center (SILC)
- 2004-07 NSF: Differing Interpretations of Young Children's Geometric Skills
- 1999-2002 NSF: The Development of Spatial Coding
- 1996-99 NSF: The Development of Spatial Coding
- 1993-96 NSF: The Development of Spatial Coding

- 1988-92 NICHHD: The Development of Spatial Coding
- 1984-87 NIMH: Timing of Puberty and Spatial Ability
- 1979-80 NIMH: Determinants of Sex Differences in Spatial Ability

Research Grants as Co-PI

- 2025-28 NSF: Fraction Learning Starts Early: Building a Strong Foundation in First and Second Grades. PI: Nancy Jordan
- 2021-26 NEI: Spatial and Nonspatial Knowledge. PI: Russell Epstein
- 2019-21 NICHHD: Between Encoding and Retrieval: Behavioral and Neural Indices of Reactivation in Children's Memory Development. PI: Ingrid Olson
- 2018-23 NSF: Developing STEM Achievement and Motivation: The Role of Spatial Skills and Parent-Child Interactions. PI: Elizabeth Gunderson
- 2015-18 NSF: MRI: Acquisition of a 3-Tesla Magnetic Resonance Imaging (MRI) Scanner. PI: Jason Chein
- 2013-16 NSF: Sketching and Self-Explanation for Diagram Comprehension in Math and Science. PI: Jennifer Cromley
- 2008-13 Dept. of Education, 21st Century Center for Cognition and Science Instruction. PI: Joseph Merlino
- 2008-11 NSF: Teaching Effective Use of Diagrammatic Reasoning in Biology. PI: Jennifer Cromley
- 2004-07 NSF, Research on Learning and Education (ROLE): Understanding and Teaching Spatial Competence. PI: Janellen Huttenlocher
- 2000-03 NSF, Research on Learning and Education (ROLE): Understanding and Teaching Spatial Competence. PI: Janellen Huttenlocher
- 1997-2000 NSF, Learning and Intelligent Systems Initiative (LIS): Understanding and Fostering Spatial Competence. PI: Janellen Huttenlocher

Research Grants as Senior Personnel

- 1994-99 NSF: Center for Excellence in Teacher Preparation. PI: Nina Hillman

Individual Support

- 1999-2000 James McKeen Cattell Fellowship
- 1973-76 Canada Council Doctoral Fellowship
- 1972-73 Harvard University Fellowship

Training Grants

- 2015-18 Dept. of Education: Network for Cognitive and Educational Science Postdoctoral Training Grant, PI
- 2014-15 NSF: REU Site Grant: Spatial Intelligence and Learning, PI

Conference Grants

- 2020-21 NSF, SBE: International Mind, Brain and Education Society (IMBES): 2020 Biennial Conference Support, PI
- 2020-21 NSF, EHR: International Mind, Brain and Education Society (IMBES): 2020 Biennial Conference Support, PI
- 2016 NSF: International Mind, Brain and Education Society (IMBES): 2016 Biennial Conference Support, PI
- 1999-2000 American Psychological Association: Scientific Workshop Grant, PI
- 1999-2000 NSF: Blue Ribbon Panel Report on Transitions of Children to the Workforce, PI
- 1994-95 NSF: Conference on the Cognitive Science Bases of Mathematics and Science Education, PI

Publications

Scholarly Book Authored

- Newcombe, N. S. & Huttenlocher, J. (2000). *Making space: The development of spatial representation and reasoning*. MIT Press.

Textbook Authored

- Newcombe, N. (1996). *Child development: Change over time*. New York: HarperCollins. (8th edition of *Child development and personality* by P. Mussen, J. Conger, J. Kagan & A. Huston.)

Scholarly Books Edited

- Newcombe, N.S. & Cheng, K. (Eds.) (2026). *Unpacking the navigation toolbox: Mapping new directions for research*. Springer.
- Skilters, J., Newcombe, N.S. & Uttal, D.H. (Eds.) (2020). *Spatial cognition XII*. Berlin: Springer-Verlag.
- Hölscher, C., Shipley, T.F., Belardinelli, M.O., Bateman, J. & Newcombe, N.S. (Eds.) (2010). *Spatial cognition VII*. Berlin: Springer-Verlag.
- Freksa, C., Newcombe, N.S., Gardenfors, P. & Wolf, S. (Eds.) (2008). *Spatial cognition VI: Learning, reasoning and talking about space*. Berlin: Springer-Verlag.
- Liben, L.S., Patterson, A.H., & Newcombe, N. (Eds.) (1981). *Spatial representation and behavior across the life span*. New York: Academic Press.

Chapters in Edited Books

- Ólafsdóttir, H.F., Bicanski, A., Creem-Regehr, S.H., Dilks, D.D., Donato, F., Epstein, R.A., Farran, E.K., Jacobs, J., Kunz, L., Wills, T.J. & Newcombe, N.S. Spatial navigation in humans and rodents: Bridging levels of analysis. In Newcombe, N.S. & Cheng, K. (Eds.), *Unpacking the navigation toolbox: Mapping new directions for research*. Springer.
- Newcombe, N.S. & Cheng, K. (2026). Addressing the challenges of navigation research. In Newcombe, N.S. & Cheng, K. (Eds.), *Unpacking the navigation toolbox: Mapping new directions for research*. Springer.
- Newcombe, N.S. & Nguyen, K.V. (2025). Developmental sequences constrain models of the mind. In Aronowitz, S. & Nadel, L. (Eds.), *Space, time, and memory*. Oxford University Press.
- Newcombe, N.S. (2024). Spatial cognition. In A. Majid and M. C. Frank (Eds.), *Oxford encyclopedia of cognitive sciences*. Oxford University Press.
- Newcombe, N.S., Benear, S., Ngo, C.T. & Olson, I.R. (2024). Memory in infancy and childhood. In M. Kahana & A. Wagner (Eds.), *Oxford handbook on human memory*. Oxford University Press.
- Newcombe, N.S. (2023). Constructing a canon for the science of learning. In C. E. Overson, C. M. Hakala, L. L. Kordonowy, & V. A. Benassi (Eds.), *In their own words: What scholars and teachers want you to know about why and how to apply the science of learning in your academic setting* (pp. 190-199). Society for the Teaching of Psychology <https://teachpsych.org/ebooks/itow>
- Tansan, M., Nguyen, K.V. & Newcombe, N.S. (2022). Spatial navigation in childhood and aging. *Annual Review of Developmental Psychology*, 4, 253-272.
- Newcombe, N.S. (2020). Early knowledge about space and quantity. In J. Lockman & C. Tamis-Lemonda (Eds.), *Cambridge handbook of infant development* (pp. 410-434). Cambridge University Press.
- Newcombe, N.S., Booth, J.L. & Gunderson, E. (2019). Spatial skills, reasoning, and mathematics. In J. Dunlosky & K. Rawson, *Cambridge handbook of cognition and education* (pp. 100-123). Cambridge University Press.
- Resnick, I., Newcombe, N.S. & Jordan, N. C. (2019). The relation between spatial reasoning and mathematical achievement in children with mathematical learning difficulties. In A. Fritz, V.G. Haase & P. Räsänen (Eds.), *International handbook of learning difficulties* (pp. 423-435). Springer.
- Jirout, J. & Newcombe, N.S. (2019). Relative magnitude as a key idea in mathematics cognition. In K.S. Mix & M. Battista (Eds.), *Visualizing mathematics: The role of spatial reasoning in mathematical thought* (pp. 3-24). Springer.
- Newcombe, N.S. (2018). Categorical influences on spatial bias. In T. L. Hubbard (Ed.), *Spatial biases in perception and cognition* (pp. 249-260). Cambridge University Press.
- Newcombe, N.S. (2018). Three kinds of spatial cognition. In J. Wixted (Ed.), *Stevens' handbook of experimental psychology and cognitive neuroscience*, 4th edition (pp. 521-552). Wiley.
- Newcombe, N. S., Möhring, W. & Frick, A. (2018). How big is many? Development of spatial and numerical magnitude understanding. In A. Henik & W. Fias (Eds.), *Heterogeneity of function in*

- numerical cognition* (pp. 157-176). San Diego: Academic Press.
- Newcombe, N.S. (2017). Cognitive development in comparative perspective: Exploring the role of language acquisition in spatial, quantitative and memory development. In Call, J. (Ed.), *APA handbook of comparative psychology* (pp. 403-425). Washington, DC: APA Books.
- Mix, K. S., Levine, S.C. & Newcombe, N.S. (2016). Development of quantitative thinking across correlated dimensions. In A. Henik (Ed.), *Continuous issues in numerical cognition: How many or how much* (pp. 3 – 35). San Diego: Academic Press.
- Newcombe, N.S., Weisberg, S.M., Atit, K., Jacovina, M.E., Ormand, C.J. & Shipley, T.F. (2015). In Glanzberg, M., Skilters, J., & Svenonius, P. (Eds.), *The lay of the land: Sensing and representing topography. Baltic International Yearbook of Cognition, Logic and Communication, Vol. 10.* <http://dx.doi.org/10.4148/1944-3676.1099>
- Newcombe, N. S & Shipley, T. F. (2015). Thinking about spatial thinking: New typology, new assessments. In J. S. Gero (ed.), *Studying visual and spatial reasoning for design creativity* (pp. 179-192). Springer.
- Newcombe, N.S. (2014). Teaching space: What, how and when. In D. R. Montello, K. Grossner, K., & D. G. Janelle (Eds.), *Space in mind: Concepts for spatial learning and education* (pp. 323-334). Cambridge, MA: MIT Press.
- Olson, I.R. & Newcombe, N.S. (2014). Binding together the elements of episodes: Relational memory and the developmental trajectory of the hippocampus. In P. J. Bauer & R. Fivush (Eds.), *Handbook on the development of children's memory, Vol. 1* (pp. 285-308). Wiley-Blackwell.
- Newcombe, N.S., Uttal, D.H. & Sauter, M. (2013). Spatial development. In P. Zelazo (Ed.), *Oxford handbook of developmental psychology, Vol. 1: Body and mind* (pp. 564-590). New York: Oxford University Press.
- Holden, M.P. & Newcombe, N.S. (2012). The development of location coding: An adaptive combination account. In Nadel, L. & Waller, D. (Eds.), *Handbook of spatial cognition* (pp. 191-209). Washington, DC: APA Books.
- Newcombe, N.S., Lloyd, M.E. & Balcomb, F. (2011). Contextualizing the development of recollection: Episodic memory and binding in young children. In S. Ghetti & P. J. Bauer (Eds.), *Origins and development of recollection: Perspectives from psychology and neuroscience* (pp. 73-100). Oxford University Press.
- Wiener, J., Shettleworth, S., Bingman, V.P., Cheng, K., Healy, S., Jacobs, L.F., Jeffery, K.J., Mallot, H.A., Menzel, R. & Newcombe, N.S. (2011). Animal navigation: A synthesis. In R. Menzel & J. Fischer (Eds.), *Animal thinking: Contemporary issues in comparative cognition* (pp. 51-76). Strüngmann Forum Report, Vol. 8, J. Lupp, series ed. Cambridge, MA: MIT Press.
- Newcombe, N.S. (2010). On tending to our scientific knitting: Thinking about gender in the context of evolution. In J. Chrisler & D. McCreary (Eds.), *Handbook of gender research in psychology* (pp. 259-274). Springer.
- Learmonth, A.E. & Newcombe, N.S. (2010). The development of place learning in comparative perspective. In F. Dolins & R. Mitchell (Eds.), *Spatial cognition: Mapping the self and space* (pp. 520-538). Cambridge University Press.

- Newcombe, N.S. (2010). What is neoconstructivism? In Johnson, S.P. (Ed.), *Neoconstructivism: The new science of cognitive development* (pp. v-viii). New York: Oxford University Press.
- Newcombe, N.S., Ratliff, K.R., Shallcross, W. & Twyman, A. (2009). Is cognitive modularity necessary in an evolutionary account of development? In L. Tommasi, L. Nadel & M.A. Peterson (Eds.), *Cognitive biology: Evolutionary and developmental perspectives on mind, brain and behavior*, Vienna Series in Theoretical Biology (pp. 105-126). Cambridge, MA: The MIT Press.
- Oakes, L.M., Newcombe, N.S. & Plumert, J.M. (2009). Are dynamic systems and connectionist approaches an alternative to “good old-fashioned cognitive development”? In J.P. Spencer, M.S.C. Thomas & J.L. McClelland (Eds.), *Toward a unified theory of development? Connectionism and dynamic systems theory re-considered* (pp. 268-285). Oxford University Press.
- Lloyd, M.E. & Newcombe, N.S. (2009). Implicit memory in childhood: Reassessing developmental invariance. In M.L. Courage & N. Cowan (Eds.), *The development of memory in infancy and childhood* (pp. 93-113). Hove and New York: Psychology Press.
- Newcombe, N.S., Lloyd, M.E. & Ratliff, K.R. (2007). Development of episodic and autobiographical memory: A cognitive neuroscience perspective. In R.V. Kail (Ed.), *Advances in child development and behavior* (Vol. 35, pp. 37-85). San Diego, CA: Elsevier.
- Newcombe, N.S. & Ratliff, K.R. (2007). Explaining the development of spatial reorientation: Modularity-plus-language versus the emergence of adaptive combination. In J. Plumert & J. Spencer (Eds.), *The emerging spatial mind* (pp. 53-76). Oxford University Press.
- Newcombe, N.S. & Crawley, S.L. (2007). To have and have not: What do we mean when we talk about long-term memory development? In L.M. Oakes & P.J. Bauer (Eds.), *Short- and long-term memory in infancy and early childhood: Taking the first steps toward remembering*. Oxford University Press.
- Newcombe, N.S. (2007). Taking science seriously: Straight thinking about sex differences. In S. Ceci & W. Williams (Eds.), *Why aren't more women in science? Top gender researchers debate the evidence* (pp. 69-77). Washington, DC: APA Books.
- Cheng, K. & Newcombe, N.S. (2006). Geometry, features, and orientation in vertebrate animals: A pictorial review. In M.F. Brown & R.G. Cook (Eds.), *Animal spatial cognition: Comparative, neural & computational approaches*. Comparative Cognition Press. <http://www.pigeon.psy.tufts.edu/asc/>
- Newcombe, N.S. & Huttenlocher, J. (2006). Development of spatial cognition. In D. Kuhn & R.S. Siegler (Eds.), *Handbook of child psychology* (6th edition, pp. 734-776). John Wiley and Sons.
- Dziembowski, Z. & Newcombe, N.S. (2005). Transfer of mathematical problem-solving procedures acquired through physical science instruction: When you don't see it, why not? In J. Mestre (Ed.), *Transfer of learning from a modern multidisciplinary perspective* (pp. 337-356). In *Current Perspectives on Cognition, Learning and Instruction*, Greenwich, CT: Information Age Publishing.
- Newcombe, N.S. (2005). Evidence for and against a geometric module: The roles of language and action. In J. Rieser, J. Lockman & C. Nelson (Eds.), *Action as an organizer of learning and development*. Minnesota Symposia on Child Psychology, Vol. 33 (pp. 221-241). Mahwah, NJ: Lawrence Erlbaum.

- Newcombe, N.S. & Learmonth, A.E. (2005). The development of spatial competence. In P. Shah & A. Miyake (Eds.), *Handbook of visuospatial thinking* (pp. 213-256). Cambridge University Press.
- Newcombe, N.S. & Sluzenski, J. (2004). Starting points and change in early spatial development. In G. Allen (Ed.), *Remembering where* (pp. 25-40). Lawrence Erlbaum.
- Newcombe, N.S. (2003). Development. In L. Nadel (Ed.), *The encyclopedia of cognitive science* (pp. 955-959). Nature Publishing Group, Macmillan Publishers Ltd. (UK).
- Newcombe, N.S. (2002). Biology is to medicine as psychology is to education: True or false? In D.F. Halpern & M.D. Hakel (Eds.), *Applying the science of learning to university teaching and beyond* (pp. 9-18). New Directions for Teaching and Learning series, Number 89. San Francisco: Jossey-Bass.
- Newcombe, N.S. (2002). Spatial cognition. In D. Medin (Ed.), *Cognition Volume, Stevens' Handbook of Experimental Psychology*, third edition (pp. 113-163). New York: John Wiley.
- Newcombe, N. S., Mathason, L. & Terlecki, M. (2002). Maximization of spatial competence: More important than finding the cause of sex differences. In A. McGillicuddy-De Lisi & R. De Lisi (Eds.), *Biology, society and behavior: The development of sex differences in cognition* (pp. 183-206). Westport, CT: Ablex Publishing.
- Newcombe, N.S. (2000). Early experience matters for spatial development (but different kinds at different times). In N. A. Fox, L. A. Leavitt & J. Warhol (Eds.), *The role of early experience in infant development* (pp. 165-186). Pediatric Round Table, Johnson and Johnson Pediatric Institute.
- Newcombe, N. (1997). New perspectives on spatial representation: What different tasks tell us about how people remember location. In N. Foreman & R. Gillett (Eds.), *Interacting with the environment: A handbook of spatial paradigms and methodologies* (pp. 85-102). Psychology Press.
- Newcombe, N. (1989). The development of spatial perspective taking. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 22), (pp. 203-247). Academic Press.
- Newcombe, N. & Baenninger, M. A. (1989). Biological change and cognitive ability in adolescence. In G. Adams, R. Montemayor, & T. Gullotta (Eds.), *Advances in adolescent development* (Vol. 1), (pp. 168-191). Newbury Park, CA: Sage.
- Branch, C. W. & Newcombe, N. (1988). The development of racial attitudes in black children. In R. Vasta (Ed.), *Annals of child development* (Vol. 5) (pp. 125-154). Greenwich, CT: JAI Press.
- Newcombe, N. & Dubas, J.S. (1986). Individual differences in cognitive ability: Are they related to timing of puberty? In R.M. Lerner & T.T. Foch (Eds.), *Biological-psychosocial interactions in early adolescence: A life-span perspective*, (pp. 249-302). Hillsdale, NJ: Lawrence Erlbaum.
- Newcombe, N. (1985). Methods for the study of spatial representation. In R. Cohen (Ed.), *The development of spatial cognition*, (pp. 277-300). Hillsdale, NJ: Lawrence Erlbaum.
- Huttenlocher, J. & Newcombe, N. (1984). The child's representation of information about location. In C. Sophian (Ed.), *Origins of cognitive skills*, (pp. 81-111). Hillsdale, NJ: Lawrence Erlbaum.
- Newcombe, N. (1982). Sex-related differences in spatial ability: Problems and gaps in current approaches. In M. Potegal (Ed.), *Spatial abilities: Development and physiological foundations*, (pp. 223-250). New York: Academic Press.

Newcombe, N. (1982). Spatial cognition and cognitive development. In R. Cohen (Ed.), *Children's conceptions of spatial relationships*, (pp. 65-81). (New Directions for Child Development series). San Francisco: Jossey-Bass.

Newcombe, N. (1981). Spatial representation and behavior: Retrospect and prospect. In Liben, L.S., Patterson, A.H., & Newcombe, N. (Eds.), *Spatial representation and behavior across the life span*, (pp. 373-388). New York: Academic Press.

Refereed Journal Articles

Resnick et al.

Silla, E. M., Viegut, A. A., Redican, E., Barbieri, C. A., Resnick, I., Newcombe, N. S., & Jordan, N. C. (in press). Profiles of fraction knowledge in first grade and their relation to cognitive and mathematical skills. *Learning and Individual Differences*.

Brucato, M., Newcombe, N.S. & Chein, J. (in press). Spatial perspective taking is distinct from cognitive and affective perspective taking. *Journal of Experimental Psychology: General*.

Hill, K., Cohen, S.S., Olson, I.R. & Newcombe, N.S. (2025). The role of narrative structure in scaffolding children's recall. *Journal of Cognition and Development*.

Karjack, S., Newcombe, N.S. & Ngo, C.T. (2025). The dependence of children's generalization on episodic memory varies with age and level of abstraction. *Nature Communication*, 16 (1), 8894.

Cohen, S.S., Olson, I.R. & Newcombe, N.S. (2025). The component structure of memory during development. *Developmental Psychology*.

Möhring, W. & Newcombe, N. S. (2025). Pre-service teachers' views about spatial skills and associations with their own spatial skills, emotions, and confidence. *Mind, Brain and Education*, 19, 219-231.

Litwin, J., Hill, K., Foley, J., Tani, N., Cohen, S., Newcombe, N. & Olson, I. (2025). Autobiographical memory in children: Relationship to neural white matter. *Memory*, 33 (9), 1129-1141.

Learning Variability Network Exchange (LEVANTE) (2025). A global framework for measuring children's learning variability through collaborative data sharing. *Child Development*, 96 (6), 1867-1884.

Lader, J.L., Newcombe, N.S. & Nguyen, K.V. (2025). Individual differences in navigation skill: Towards reliable and valid measures. *Cognitive Research: Principles and Implications*, 10 (1), 27.

Tian, J., Bennett-Pierre, G., Tavassolie, N., Zhang, X., D'Antonio, E., Sylverne, L., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K., & Gunderson, E. A. (2025). A month-long parent-led spatial intervention failed to improve children's spatial skills. *Mind, Brain, and Education*, 19, 208-218.

Nguyen, K.V., Olson, I.R. & Newcombe, N.S. (2025). Do spatial navigation and episodic memory rely on the same systems? Evidence from a naturalistic experience with children and adults. *Journal of Experimental Psychology: General*, 154(10), 2726–2739.

Tani, N., Olson, I. R., & Newcombe, N. S. (2025). The limits of agency: Young children's memory may

- not benefit from choice. *Collabra: Psychology*, 11 (1), 137316.
- Bennett-Pierre, G., Shipley, T.F., Newcombe, N.S. & Gunderson, E.A. (2025). Testing a novel measure of non-rigid, ductile spatial skill and its relation to spatial skills and experiences. *Cognitive Research: Principles and Implications*, 10 (1), 13.
- Cohen, S.S., Ngo, C.T., Olson, I.R. & Newcombe, N.S. (2025). Pattern separation and pattern completion in early childhood. *Proceedings of the National Academy of Sciences*.
- Kus, M. & Newcombe, N.S. (2025). Facilitation of students' disembedding: *International Journal of STEM Education*.
- Newcombe, N.S. (2024). Learning to live in the spatial world: Experience-expectant and experience-dependent input. *Developmental Review*, 74, 101166.
- Benear, S.L., Onwukanjo, O.J., Olson, I.R. & Newcombe, N.S. (in press). Children's memory for events: The challenge of free recall. *Journal of Cognitive Neuroscience*.
- Ngo, C. T., Buchberger, E. S., Phuc T. U. Nguyen, Newcombe, N. S., & Werkle-Bergner, M. (2024). Building a cumulative science of memory development. *Developmental Review*, 72, 101119.
- Bevandić, J., Chareyron, L. J., Bachevalier, J., Cacucci, F., Genzel, L., Newcombe, N. S., Vargha-Khadem, F., Ólafsdóttir, H.F. (2024). Episodic memory development: Bridging animal and human research. *Neuron*, 112, 1060-1080. <https://doi.org/10.1016/j.neuron.2024.01.020>
- Jeffery, K.J., Cheng, K., Newcombe, N.S., Bingman, V.P. & Menzel, R. (2024). Unpacking the navigation toolbox: Insights from comparative cognition. *Proceedings of the Royal Society B*, 291(2016), 20231304.
- Uttal, D.H., McKee, K., Simms, N., Hegarty, M. & Newcombe, N.S. (2024). How can we best assess spatial skills? Practical and conceptual challenges. *Journal of Intelligence*, 12(1), 8.
- Newcombe, N.S. (2024). What have we learned from research on the "geometric module"? *Learning and Behavior*, 52, 14-18.
- Tian, J., Bennett-Pierre, G., Tavassolie, N., Newcombe, N.S., Weinraub, M., Hindman, A.GH., Newton, K.J. & Gunderson, E.A. (2023). A growth-mindset message leads parents to choose more challenging learning activities. *Journal of Intelligence*, 11(10), 193.
- Jaeger, A.J., Weisberg, S.M., Nazareth, A. & Newcombe, N.S. (2023). Using a picture (or a thousand words) for supporting spatial knowledge of a complex virtual environment. *Cognitive Research: Principles and Implications*, 8, Article 48 <https://doi.org/10.1186/s41235-023-00503-z> .
- Viegut, A. A., Resnick, I., Miller-Cotto, D., Newcombe, N. S., & Jordan, N. C. (2023). Tracking informal fraction knowledge and its correlates across first grade. *Developmental Psychology*, 59(10), 1739–1756. <https://doi.org/10.1037/dev0001581>.
- Benear, S.L., Popal, H.S., Zheng, Y., Tanriverdi, B., Murty, V.P., Perlman, S.B., Olson, I.R., & Newcombe, N.S. (2023). Setting boundaries: Development of neural and behavioral event cognition in early childhood. *Developmental Science*, 26,6, e13409.
- Bennett-Pierre, G., Weinraub, M., Newcombe, N.S. & Gunderson, E. (2023). "This is hard!": Children's and parents' talk about difficulty during dyadic interactions. *Developmental Psychology*, 9(7),

1268-1282.

Nguyen, K. V., Tansan, M., & Newcombe, N. S. (2023). Studying the development of navigation using virtual environments. *Journal of Cognition and Development, 24*, 1- 16.

Brucato, M., Frick, A., Pichelmann, S., Nazareth, A., & Newcombe, N.S. (2023). Measuring spatial perspective taking: Analysis of four measures using item response theory. *Topics in Cognitive Science, 15*, 46-74.

Newcombe, N.S., Hegarty, M., & Uttal, D. (2023). Building a cognitive science of human variation: Individual differences in spatial navigation. *Topics in Cognitive Science, 15*, 6-14.

Resnick, I.R., Goldwater, M. & Newcombe, N.S. (2023). Cross-national differences in the relation between reasoning about fraction and decimal magnitudes, reasoning proportionally, and mathematics achievement. *Journal of Numerical Cognition, 9*, 222-239.

Brunec, I. K. Nantais, M.M., Sutton, J.E., Epstein, R.A., Newcombe, N.S. (2023). Exploration patterns shape cognitive map learning. *Cognition, 233*, 105360.

Miller-Cotto, D., Booth, J. & Newcombe, N.S. (2022). Sketching and verbal self-explanation: Do they help middle school children solve science problems? *Applied Cognitive Psychology, 36*, 919-935.

Benear, S.L., Horwath, E.A., Cowan, E., Camacho, M.C., Ngo, C.T., Newcombe, N.S., Olson, I.R., Perlman, S.B. & Murty, V.P. (2022). Children show adult-like hippocampal pattern similarity for familiar but not novel events. *Brain Research, 1791*, 147991.
<https://doi.org/10.1016/j.brainres.2022.147991>

Tian, J., Ren, K., Weinraub, M., Newcombe, N.S., Vandell, D. & Gunderson, E.A. (2023). Tracing the origins of the STEM gender gap: The contribution of childhood spatial skills. *Developmental Science, 26*, e13302.

Ren, K., Wang, Y., Weinraub, M., Newcombe, N.S. & Gunderson, E.A. (2022). Fathers' and mothers' praise and spatial language during play with first graders: Patterns of interaction and relations to math achievement. *Developmental Psychology, 58*, 1931-1946.

Weisberg, S.M., Schinazi, V.R., Ferrario, A., & Newcombe, N.S. (2023). Evaluating the effects of a programming error on a virtual environment measure of spatial navigation behavior. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 49*, 575-589.

Brucato, M., Nazareth, A. & Newcombe, N.S. (2022). Longitudinal development of cognitive mapping from childhood to adolescence. *Journal of Experimental Child Psychology, 219*, 105412.

Ngo, C.T. & Newcombe, N.S. (2021). Relational binding and holistic retrieval in aging. *Memory*. DOI: [10.1080/09658211.2021.1974047](https://doi.org/10.1080/09658211.2021.1974047)

Hallinen, N.R., Sprague, L.N., Blair, K.P., Adler, R.M. & Newcombe, N.S. (2021). Finding formulas: Does active search facilitate appropriate generalization? *Cognitive Research: Principles and Implications, 6*, Article 50.

Benear, S., Ngo, C.T., Olson, I.R. & Newcombe, N.S. (2021). Understanding relational binding in early childhood: Interacting effects of overlap and delay. *Journal of Experimental Child Psychology, 208*, 105152.

- Ngo, C. T., Benezar, S. L., Popal, H., Olson, I. R., & Newcombe, N. S. (2021). Contingency of semantic generalization on episodic specificity varies across development. *Current Biology*, *31*, P2690-2697.e5.
- Nardi, D., Singer, K.J., Price, K.M., Carpenter, S.E., Bryant, J.A., Hatheway, M.A., Johnson, J.N., Pairitz, A.K., Young, K.Y. & Newcombe, N.S. (2021). Navigating without vision: Spontaneous use of terrain slant in outdoor place learning. *Spatial Cognition & Computation*, *21*, 235-255.
- Donato, F., Alberini, C., Amso, D., Dragoi, G., Dranovsky, A. & Newcombe, N.S. (2021). The ontogeny of hippocampus-dependent memories. *Journal of Neuroscience*, *41*, 920-926.
- Peer, M., Brunec, I. K., Newcombe, N.S. & Epstein, R.A. (2021). Structuring knowledge with cognitive maps and cognitive graphs. *Trends in Cognitive Science*, *25*, 37-54.
- Newcombe, N.S. (2020). The puzzle of spatial sex differences: Current status and prerequisites to solution. *Child Development Perspectives*, *14*, 251-257.
- Zhao, J., Sensibaugh, T., Bodenheimer, R., McNamara, T., Nazareth, A., Newcombe, N.S., Minear, M. & Klippel, A. (2020). Desktop versus immersive virtual environments: Effects on spatial learning. *Spatial Cognition and Computation*, *20*, 4, 328-363.
- Ngo, C.T., Michelmann, S., Olson, I.R. & Newcombe, N.S. (2020). Pattern separation and pattern completion: Behaviorally separable processes? *Memory and Cognition*, *49*, 193-205.
- Begolli, K., Booth, J., Holmes, C. & Newcombe, N.S. (2020). How many apples make a quarter? The challenge of discrete proportional formats. *Journal of Experimental Child Psychology*, *191*, Article 104774.
- Green, C.S. & Newcombe, N.S. (2020). Cognitive training: How evidence, controversies, and challenges inform education policy. *Policy Insights from the Behavioral and Brain Sciences*, *7*, 80-86.
- Ngo, C.T., Horner, A., Newcombe, N.S. & Olson, I.R. (2019). Development of holistic episodic recollection. *Psychological Science*, *30*, 1696-1706.
- Nazareth, A., Huang, X., Voyer, D. & Newcombe, N.S. (2019). A meta-analysis of sex differences in human navigation skills. *Psychonomic Bulletin & Review*, *26*, 1503-1528.
- Canada, K., Ngo, C.T., Newcombe, N.S., Geng, F., & Riggins, T. (2019). It's all in the details: Relations between young children's developing pattern separation abilities and hippocampal subfield volumes. *Cerebral Cortex*, *29*, 3427-3433.
- Ngo, C.T., Newcombe, N.S. & Olson, I.R. (2019). Gain-loss framing enhances mnemonic discrimination in preschoolers. *Child Development*, *90*, 1569-1778.
- Ngo, C.T., Lin, Y., Newcombe, N.S. & Olson, I.R. (2019). Building up and wearing down episodic memory: Mnemonic discrimination and relational binding. *Journal of Experimental Psychology: General*, *148*, 1463-1479.
- Nazareth, A., Newcombe, N.S., Shipley, T.F., Velazquez, M. & Weisberg, S.M. (2019). Beyond small-scale spatial skills: Navigation skills and geoscience education. *Cognitive Research: Principles*

and Implications, 4, doi:10.1186/s41235-019-0167-2

- Weisberg, S.M., Newcombe, N.S. & Chatterjee, A. (2019). Everyday taxi drivers: Do better navigators have larger hippocampi? *Cortex*, 115, 280-293.
- Newcombe, N.S. (2019). Navigation and the developing brain. *Journal of Experimental Biology*, 222: jeb186460.
- Verdine, B.N., Zimmerman, L., Foster, L., Marzouk, M.A., Golinkoff, R.M. Hirsh-Pasek, K. & Newcombe, N.S. (2019). Effects of geometric toy design on parent-child interactions and spatial language. *Early Childhood Research Quarterly*, 46, 126-141.
- Jirout, J.J., Holmes, C.A. & Newcombe, N.S. (2018). Scaling up spatial development: A closer look at children's scaling ability and its relation to number knowledge. *Mind Brain and Education*, 12, 110-119.
- Atit, K., Miller, D., Newcombe, N.S. & Uttal, D.H. (2018). Teachers' spatial skills across disciplines and education levels: Exploring nationally representative data. *Archives of Scientific Psychology*, 6, 130-137.
- Holmes, C.A., Newcombe, N.S. & Shipley, T.F. (2018). Move to learn: Integrating spatial information from multiple viewpoints. *Cognition*, 178, 7-25.
- Weisberg, S.M. & Newcombe, N.S. (2018). Cognitive maps: Some people make them, some people struggle. *Current Directions in Psychological Science*, 27, 220-226.
- Keresztes, A., Ngo, C.T., Lindenberger, U., Werkle-Bergner, M. & Newcombe, N.S. (2018). Hippocampal maturation drives memory from generalization to specificity. *Trends in Cognitive Sciences*, 22, 676-686.
- Twyman, A. D., Holden, M.P. & Newcombe, N.S. (2018). First direct evidence of cue integration in reorientation: A new paradigm. *Cognitive Science*, 42, 923-936.
- Ngo, C.T., Newcombe, N.S. & Olson, I.R. (2018). The ontogeny of relational memory and pattern separation. *Developmental Science*, 21, e12556.
- Ngo, C.T., Olson, I.R., Metoki, A., Alm, K., Hampton, W., Newcombe, N.S. & Riggins, T. (2018). White matter structural connectivity and episodic memory in early childhood. *Developmental Cognitive Neuroscience*, 28, 41-53.
- Schunn, C.D., Alfieri, L., Cromley, J.G., Massey, C. & Merlino, F.J. & Newcombe, N.S. (2018). Using principles of cognitive science to improve science learning in middle school: What works when and for whom? *Applied Cognitive Psychology*, 32, 225-240.
- Nazareth, A., Weisberg, S.M., Margulis, K. & Newcombe, N.S. (2018). Charting the development of cognitive mapping. *Journal of Experimental Child Psychology*, 170, 86-106.
- Harris, J., George, N., Hirsh-Pasek, K. & Newcombe, N.S. (2018). Where will it go? How children and adults reason about force and motion. *Cognitive Development*, 45, 113-124.
- Möhring, W., Frick, A., Newcombe, N. S. (2018). Spatial scaling, proportional thinking, and numerical understanding in 5- to 7-year-old children. *Cognitive Development*, 45, 57-67.

- Galati, A., Weisberg, S.M., Newcombe, N.S. & Avraamides, M. (2018). When gestures show us the way: Co-thought gestures selectively facilitate navigation and spatial memory. *Spatial Cognition and Computation*, 18, 1-30.
- Blacker, K.J., Weisberg, S.M., Newcombe, N.S. & Courtney, S.M. (2017). Keeping track of where we are: Spatial working memory in navigation. *Visual Cognition*, 25, 691-702.
- Newcombe, N.S. (2017). Harnessing spatial thinking to support STEM learning. *OECD Education Working Papers*, No. 161, OECD Publishing, Paris. <http://dx.doi.org/10.1787/7d5dcae6-en>
- Holmes, C.A., Marchette, S. & Newcombe, N.S. (2017). Multiple views of space: Continuous visual flow enhances small-scale spatial learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 43, 851-861.
- Xu, Y., Regier, T. & Newcombe, N.S. (2017). An adaptive cue combination model of human spatial reorientation. *Cognition*, 163, 56-66.
- Resnick, I., Davatzes, A., Newcombe, N. S., & Shipley, T. F. (2017). Using analogy to learn about phenomena at scales outside of human perception. *Cognitive Research: Principles and Implications*, 2:21, 1-17.
- Resnick, I., Davatzes, A., Newcombe, N. S., & Shipley, T. F. (2017). Using relational reasoning to learn about scientific phenomena at unfamiliar scales. *Educational Psychology Review*. 29, 11-25.
- Resnick, I., Newcombe, N.S. & Shipley, T.F. (2017). Dealing with big numbers: Representation and understanding of magnitudes outside of human experience. *Cognitive Science*, 41, 1020-1041.
- Verdine B.N., Golinkoff R.M., Hirsh-Pasek, K. & Newcombe, N.S. (2017). Links between spatial and mathematical skills across the preschool years. *Monographs of the Society for Research in Child Development*, 82, 1, Serial Number 124.
- Cromley, J.G., Weisberg, S.M., Dai, T., Newcombe, N.S., Schunn, C.D., Massey, C. & Merlino, F.J. (2016). Improving middle school science learning using diagrammatic reasoning. *Science Education*, 100, 1184-1213.
- Atit, K., Weisberg, S.M., Newcombe N.S. & Shipley, T.F. (2016). Learning to interpret topographic maps: Understanding layered spatial information. *Cognitive Research: Principles and Implications*, 1, 2, 1-18.
- Möhring, W., Newcombe, N. S. & Frick, A. (2016). Using mental transformation strategies for spatial scaling: Evidence from a discrimination task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 42, 1473-1479.
- Newcombe, N.S. (2016). Thinking spatially in the science classroom. *Current Opinion in Behavioral Sciences*, 10, 1-6.
- Möhring, W., Ramsook, K.A., Hirsh-Pasek, K., Golinkoff, R.M. & Newcombe, N. S. (2016). Where music meets space: Children's sensitivity to pitch intervals is related to their mental spatial transformation skills. *Cognition*, 151, 1-5.
- Miller, B.W., Cromley, J.G. & Newcombe, N.S. (2016). Improving diagrammatic reasoning in middle school science using conventions of diagrams instruction delivered in electronic warm-ups. *Journal of Computer Assisted Learning*, 32, 374-390.

- Weisberg, S.M. & Newcombe, N.S. (2016). How do (some) people make a cognitive map? Routes, places and working memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *42*, 768-785.
- Ngo, C.T., Weisberg, S.M., Newcombe, N.S. & Olson, I.R. (2016). The relation between navigation strategy and associative memory: An individual differences approach. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *42*, 663-670.
- Verdine B.N., Lucca K.R., Golinkoff R.M., Hirsh-Pasek, K. & Newcombe, N.S. (2016). The shape of things: The origin of young children's knowledge of the names and properties of geometric forms. *Journal of Cognition and Development*, *17*, 142-161.
- Möhring, W., Frick, A., Newcombe, N. S., & Levine, S.C. (2016). Spatial proportional reasoning is associated with formal knowledge about fractions. *Journal of Cognition and Development*, *17*, 67-84.
- Holden, M. P., Newcombe, N.S., Resnick, I. & Shipley, T.F. (2016). Seeing like a geologist: Bayesian use of expert categories in location memory. *Cognitive Science*, *40*, 440-454. .
- Bergey, B. W., Cromley, J. G., & Newcombe, N. S. (2015). Teaching high school biology students to coordinate text and diagrams: Relations with transfer, effort, and spatial skill. *International Journal of Science Education*, *37*, 2476-2502.
- Frick, A. & Newcombe, N.S. (2015). Young children's perception of diagrammatic representations. *Spatial Cognition and Computation*, *15*, 227-245.
- Newcombe, N.S., Levine, S.C. & Mix, K. S. (2015). Thinking about quantity: The intertwined development of spatial and numerical cognition. *WIREs in Cognitive Science*, *6*, 491-505.
- Nardi, D., Holmes, C.A., Newcombe, N.S., & Weisberg, S.M. (2015). Sex differences and errors in the use of slope for navigation. *Cognitive Processing*, *16*, 323-326.
- Zosh, J.M., Verdine B.N., Filipowicz, A., Golinkoff R.M., Hirsh-Pasek, K., & Newcombe N.S. (2015). Talking shape: Parental language with electronic vs. traditional shape sorters. *Mind, Brain and Education*, *9*, 136-144.
- Holmes, C.A., Weisberg, S.M., Newcombe, N.S., & Nardi, D. (2015). Children's use of slope to guide navigation: Sex differences relate to spontaneous slope perception. *Spatial Cognition and Computation*, *15*, 170-185.
- Möhring, W., Newcombe, N. S. & Frick, A. (2015). The relation between spatial thinking and proportional reasoning in preschoolers. *Journal of Experimental Child Psychology*, *132*, 213-220.
- Bergey, B.W., Cromley, J.G., Kirchgessner, A. & Newcombe, N.S. (2015). Using diagrams versus text for spaced restudy: Effects on learning in 10th grade biology classes. *British Journal of Educational Psychology*, *85*, 59-74.
- Jirout, J. & Newcombe, N.S. (2015). Building blocks for developing spatial skills: Evidence from a large representative U.S. sample. *Psychological Science*, *26*, 302-310.
- Holden, M. P., Newcombe, N.S. & Shipley, T.F. (2015). Categorical biases in spatial memory: The role of certainty. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *41*, 473-

481.

- Weisberg, S.M., Nardi, D., Newcombe, N.S. & Shipley, T.F. (2014). Up by upwest: Is slope like north? *Quarterly Journal of Experimental Psychology*, 67(10), 1959-1976.
- Frick, A., Möhring, W., & Newcombe, N. S. (2014). Development of mental transformation abilities. *Trends in Cognitive Sciences*, 18, 536-542.
- Newcombe, N.S., Balcomb, F., Ferrara, K., Hansen, M. & Koski, J. (2014). Two rooms, two representations? Episodic-like memory in toddlers and preschoolers. *Developmental Science*, 17, 743-756.
- Jirout, J. & Newcombe, N.S. (2014). Mazes and maps: Can young children find their way? *Mind, Brain and Education*, 8, 89-96.
- Weisberg, S.M. & Newcombe, N.S. (2014). A slippery directional slope: Individual differences in using slope as a directional cue. *Memory and Cognition*, 42, 648-661.
- Möhring, W., Newcombe, N. S., & Frick, A. (2014). Zooming in on spatial scaling: Preschool children and adults use mental transformations to scale spaces. *Developmental Psychology*, 50, 1614-1619.
- Verdine, B.N., Golinkoff, R.M., Hirsh-Pasek, K., Newcombe, N.S., Filipowicz, A.T. & Chang, A. (2014). Deconstructing building blocks: Preschoolers' spatial assembly performance relates to early mathematics skills. *Child Development*, 85, 1062-1076.
- Verdine, B.N., Golinkoff, R.M., Hirsh-Pasek, K. & Newcombe, N.S. (2014). Finding the missing piece: Blocks, puzzles, and shapes fuel school readiness. *Trends in Neuroscience and Education*, 3, 7-13.
- Newcombe, N.S. (2014). The origins and development of magnitude estimation. *Ecological Psychology*, 26, 147-157.
- Weisberg, S.M., Schinazi, V.R., Newcombe, N.S., Shipley, T.F., & Epstein, R.A. (2014). Variations in cognitive maps: Understanding individual differences in navigation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40, 669-682.
- Frick, A., Möhring, W. & Newcombe, N. S. (2014). Picturing perspectives: Development of perspective-taking abilities in 4- to 8-year-olds. *Frontiers in Developmental Psychology*. 5:386.
[doi: 10.3389/fpsyg.2014.00386](https://doi.org/10.3389/fpsyg.2014.00386)
- Cheng, K., Huttenlocher, J. & Newcombe, N.S. (2013). 25 years of research on the use of geometry in spatial reorientation: A current theoretical perspective. *Psychonomic Bulletin and Review*, 20, 1033-1054.
- Fisher, K.R., Hirsh-Pasek, K., Newcombe, N.S. & Golinkoff, R.M. (2013). Taking shape: Supporting preschoolers' acquisition of geometric knowledge through guided play. *Child Development*, 84, 1872-1878.
- Frick, A., Hansen, M. & Newcombe, N.S. (2013). Development of mental rotation in 3- to 5-year-old children. *Cognitive Development*, 28, 386-399.
- Newcombe, N.S. (2013). Cognitive development: Changing views of cognitive change. *WIREs in*

Cognitive Science, 4, 479-491.

- Cromley, J.G., Perez, A.C., Fitzhugh, S., Tanaka, J., Newcombe, N., Shipley, T.F. & Wills, T. W. (2013). Improving students' diagram comprehension with classroom instruction. *Journal of Experimental Education*, 81, 511-537.
- Cromley, J.C., Bergey, B.W., Fitzhugh, S., Newcombe, N., Wills, T.W., Shipley, T.F. & Tanaka, J. C. (2013). Effects of three diagram instruction methods on transfer of diagram comprehension skills: The critical role of inference while learning. *Learning and Instruction*. 26, 45-58.
- Uttal, D.H., Miller, D.I. & Newcombe, N.S. (2013). Exploring and enhancing spatial thinking: Links to STEM achievement? *Current Directions in Psychological Science*, 22, 367-373.
- Holden, M. P., Newcombe, N.S. & Shipley, T.F. (2013). Location memory in the real world: Category adjustment effects in 3-dimensional space. *Cognition*, 128, 45-55.
- Schinazi, V.R., Nardi, D., Newcombe, N.S., Shipley, T.F. & Epstein, R.A. (2013). Hippocampal size predicts rapid learning of a cognitive map in humans. *Hippocampus*, 23, 515-528.
- Koski, J., Olson, I. R. & Newcombe, N.S. (2013). Tracking the eyes to see what children remember. *Memory*, 21, 396-407.
- Harris, J., Hirsh-Pasek, K. & Newcombe, N.S. (2013). Understanding spatial transformations: Similarities and differences between mental rotation and mental folding. *Cognitive Processing*, 14, 105-115.
- Wan, X., Newcombe, N.S. & Fitzhugh, S. (2013). Elimination of sex differences in direction giving. *Cognitive Processing*, 14, 197-199.
- Frick, A., Ferrara, K. & Newcombe, N.S. (2013). Using a touch screen paradigm to assess the development of mental rotation between 3 ½ and 5 ½ years of age. *Cognitive Processing*, 14, 117-127.
- Göksun, T., Goldin-Meadow, S., Newcombe, N.S. & Shipley, T.F. (2013). Individual differences in mental rotation: What does gesture tell us? *Cognitive Processing*, 14, 153-162.
- Nardi, D., Newcombe, N.S. & Shipley, T.F. (2013). Reorienting with terrain slope and landmarks. *Memory and Cognition*, 41, 214-228.
- Twyman, A. D., Newcombe, N.S. & Gould, T.G. (2013). Malleability in the development of spatial reorientation. *Developmental Psychobiology*, 55, 243-255.
- Twyman, A., D., Nardi, D. & Newcombe, N. S. (2013). Two fields are better than one: Developmental and comparative perspectives on understanding spatial reorientation. *Comparative Cognition and Behavior Reviews*, 8, 78-97.
- Uttal, D.H., Meadow, N. G., Tipton, E., Hand, L. L. Alden, A. R., Warren, C. & Newcombe, N.S. (2013). The malleability of spatial skills: A meta-analysis of training studies. *Psychological Bulletin*, 139, 352-402.
- Harris, J., Hirsh-Pasek, K. & Newcombe, N.S. (2013). A new twist on studying the development of dynamic spatial transformations: Mental paper folding in young children. *Mind, Brain and Education*, 7, 49-55.

- Frick, A. & Newcombe, N. (2012). Getting the big picture: Development of spatial scaling abilities. *Cognitive Development, 27*, 270-282.
- Sutton, J.E., Twyman, A.D., Joanisse, M.F. & Newcombe, N.S. (2012). Geometry three ways: An fMRI investigation of geometric processing during reorientation. *Journal of Experimental Psychology: Learning, Memory and Cognition, 38*(6), 1530-1541.
- Newcombe, N.S. & Stieff, M. (2012). Six myths about spatial thinking. *International Journal of Science Education, 34*, 955-971.
- Ferrara, K., Golinkoff, R. Hirsh-Pasek, K., Lam, W. & Newcombe, N. (2011). Block talk: Spatial language during block play. *Mind, Brain and Education, 5*, 143-151.
- Balcomb, F., Newcombe, N.S., & Ferrara, K. (2011). Finding where and saying where: Developmental relationships between place learning and language in the second year. *Journal of Cognition and Development, 12*, 315-331.
- Nardi, D., Newcombe, N.S. & Shipley, T.F. (2011). The world is not flat: Can people reorient using slope? *Journal of Experimental Psychology: Learning, Memory, and Cognition, 37*, 354-367.
- Twyman, A.D. & Newcombe, N.S. (2010). Five reasons to doubt the existence of a geometric module. *Cognitive Science, 34*, 1315-1356.
- Newcombe, N.S. & Frick, A. (2010). Early education for spatial intelligence: Why, what and how. *Mind, Brain and Education, 4*, 102-111.
- Sutton, J.E., Joanisse, M.F. & Newcombe, N.S. (2010). Spinning in the scanner: Neural correlates of virtual reorientation. *Journal of Experimental Psychology: Learning, Memory and Cognition, 36*, 1097-1107.
- Holden, M., Curby, K., Newcombe, N.S. & Shipley, T.F. (2010). A category adjustment approach to memory for spatial location in natural scenes. *Journal of Experimental Psychology: Learning, Memory and Cognition, 36*, 590-604.
- Newcombe, N.S., Ratliff, K.R., Shallcross, W.L. & Twyman, A.D. (2010). Young children's use of features to reorient is more than just associative: Further evidence against a modular view of spatial processing. *Developmental Science, 13*, 213-220.
- Crawley, S.L., Newcombe, N.S. & Bingman, H. (2010). How focus at encoding affects children's source monitoring. *Journal of Experimental Child Psychology, 105*, 273-285.
- Twyman, A.D., Newcombe, N.S. & Gould, T.G. (2009). Of mice (*Mus musculus*) and toddlers (*Homo sapiens*): Evidence for species-general spatial reorientation. *Journal of Comparative Psychology, 123*, 342-345.
- Newcombe, N. S., Ambady, N., Eccles, J., Gomez, L., Klahr, D., Linn, M., Miller, K., & Mix, K. (2009). Psychology's role in mathematics and science education. *American Psychologist, 64*, 538-550.
- Lloyd, M.E., Doydum, A.O. & Newcombe, N.S. (2009). Memory binding in early childhood: Evidence for a retrieval deficit. *Child Development, 80*, 1321-1328.
- Ratliff, K.R. & Newcombe, N.S. (2008). Reorienting when cues conflict: Evidence for an adaptive

- combination view. *Psychological Science*, 19, 1301-1307.
- Terlecki, M.S., Newcombe, N.S. & Little, M. (2008). Durable and generalized effects of spatial experience on mental rotation: Gender differences in growth patterns. *Applied Cognitive Psychology*, 22, 996-1013.
Reprinted in Special Issue: Celebrating 25 years of *Applied Cognitive Psychology*, 2011, 25, S253-S271.
- Wright, R., Thompson, W.L., Ganis, G., Newcombe, N.S. & Kosslyn, S.M. (2008). Training generalized spatial skills. *Psychonomic Bulletin and Review*, 15, 763-771.
- Learmonth, A.E., Newcombe, N.S., Sheridan, N. & Jones, M. (2008). Why size counts: Children's spatial reorientation in large and small enclosures. *Developmental Science*, 11, 414-426.
- Ratliff, K.R. & Newcombe, N.S. (2008). Is language necessary for human spatial reorientation? Reconsidering evidence from dual task paradigms. *Cognitive Psychology*, 56, 142-163.
- Huttenlocher, J., Vasilyeva, M., Newcombe, N.S. & Duffy, S. (2008). Developing symbolic capacity one step at a time. *Cognition*, 106, 1-12.
- Newcombe, N.S. & Chiang, N. (2007). Learning geographical information from hypothetical maps. *Memory and Cognition*, 35, 895-909.
- Uttal, D.H., Sandstrom, L.B. & Newcombe, N.S. (2006). One hidden object, two spatial codes: Young children's use of relational and distance coding. *Journal of Cognition and Development*, 7, 503-525.
- Sluzenski, J., Newcombe, N.S. & Kovacs, S. (2006). Binding, relational memory and recall of naturalistic events: A developmental perspective. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 32, 89-100.
- Kovacs, S. & Newcombe, N.S. (2006). Developments in source monitoring: The role of thinking of others. *Journal of Experimental Child Psychology*, 93, 25-44.
- Levine, S.C., Vasilyeva, M., Lourenco, S.F., Newcombe, N.S. & Huttenlocher, J. (2005). Socioeconomic status modifies the sex difference in spatial skill. *Psychological Science*, 16, 841-845.
- Terlecki, M.S. & Newcombe, N.S. (2005). How important is the digital divide? The relation of computer and videogame usage to gender differences in mental rotation ability. *Sex Roles*, 53, 433-441.
- Cheng, K. & Newcombe, N.S. (2005). Is there a geometric module for spatial orientation? Squaring theory and evidence. *Psychonomic Bulletin and Review*, 12, 1-23.
- Newcombe, N.S., Sluzenski, J. & Huttenlocher, J. (2005). Pre-existing knowledge versus on-line learning: What do young infants really know about spatial location? *Psychological Science*, 16, 222-227.
- Hirsh-Pasek, K., Kochanoff, A., Newcombe, N. & de Villiers, J. (2005). Using scientific knowledge to inform preschool assessment: Making the case for "empirical validity". *SRCD Social Policy Report*, 19, 3-19.
- Sluzenski, J., Newcombe, N.S. & Satlow, E. (2004). Knowing where things are in the second year of life: Implications for hippocampal development. *Journal of Cognitive Neuroscience*, 16, 1443-1451.

- Sluzenski, J., Newcombe, N.S. & Ottinger, W. (2004). Changes in reality monitoring and episodic memory in early childhood. *Developmental Science*, 7, 225-245.
- Newcombe, N.S. (2002). The nativist-empiricist controversy in the context of recent research on spatial and quantitative development. *Psychological Science*, 13, 395-401.
- Drummey, A.B. & Newcombe, N.S. (2002). Developmental changes in source memory. *Developmental Science*, 5, 502-513.
- Marshall, D.H., Drummey, A.B., Fox, N.A. & Newcombe, N.S. (2002). An event-related potential study of item recognition memory in 4-year-old children and adults. *Journal of Cognition and Development*, 3, 201-224.
- Learmonth, A.E., Nadel, L. & Newcombe, N.S. (2002). Children's use of landmarks: Implications for modularity theory. *Psychological Science*, 13, 337-341.
- Learmonth, A.E., Newcombe, N.S. & Huttenlocher, J. (2001). Toddlers' use of metric information and landmarks to reorient. *Journal of Experimental Child Psychology*, 80, 225-244.
- Newcombe, N., Drummey, A.B., Fox, N.A., Lie, E. & Ottinger-Alberts, W. (2000). Remembering early childhood: How much, how, and why (or why not). *Current Directions in Psychological Science*, 9, 55-58.
Reprinted in J. Lerner & A.E. Alberts (Eds.), *Developmental psychology reader*. Upper Saddle River, NJ: Pearson Prentice Hall, 2004.
- Newcombe, N., Huttenlocher, J. & Learmonth, A. (1999). Infants' coding of location in continuous space. *Infant Behavior and Development*, 22, 483-510.
- Newcombe, N. & Learmonth, A. (1999). Change and continuity in early spatial development: Claiming the "radical middle". *Infant Behavior and Development*, 22, 457-474.
Reprinted in J. Vauclair (Ed.), *Les théories du développement cognitif du jeune enfant (Theories of infant cognitive development)*.
- Huttenlocher, J., Newcombe, N. & Vasilyeva, M. (1999). Spatial scaling in young children. *Psychological Science*, 10, 393-398.
- Newcombe, N., Huttenlocher, J., Sandberg, E., Lie, E. & Johnson, S. (1999). What do mis-estimations and asymmetries in spatial judgment indicate about spatial representation? *Journal of Experimental Psychology: Learning, Memory and Cognition*, 25, 986-996
- Lie, E. & Newcombe, N. (1999). Elementary school children's explicit and implicit memory for faces of preschool classmates. *Developmental Psychology*, 35, 102-112.
- Satlow, E. & Newcombe, N. (1998). When is a triangle not a triangle? Young children's conceptions of geometric shapes. *Cognitive Development*, 13, 547-559.
- Newcombe, N., Huttenlocher, J., Drummey, A.B., & Wiley, J. (1998). The development of spatial location coding: Place learning and dead reckoning in the second and third years. *Cognitive Development*, 13, 185-201.
- Sandberg, E.H., Huttenlocher, J. & Newcombe, N. (1996). The development of hierarchical representation of two-dimensional space. *Child Development*, 67, 721-739.

- Baenninger, M.A. & Newcombe, N. (1995). Environmental input to the development of sex-related differences in spatial and mathematical ability. *Learning and Individual Differences*, 7, 363-379. **Reprinted** in E. Paul (Ed.) (2001), *Taking sides: Clashing views on controversial issues in sex and gender*. McGraw-Hill/Dushkin.
- Newcombe, N. & Lie, E. (1995). Covert and overt recognition of faces by children and adults. *Psychological Science*, 6, 241-245.
- Drummey, A.B. & Newcombe, N. (1995). Remembering versus knowing the past: Children's explicit and implicit memory for pictures. *Journal of Experimental Child Psychology*, 59, 549-565.
- Huttenlocher, J., Newcombe, N., & Sandberg, E. (1994). The coding of spatial location in young children. *Cognitive Psychology*, 27, 115-147.
- Newcombe, N. & Fox, N. (1994). Infantile amnesia: Through a glass darkly. *Child Development*, 65, 31-40.
- Newcombe, N. & Huttenlocher, J. (1992). Children's early ability to solve perspective-taking problems. *Developmental Psychology*, 28, 635-643.
- Newcombe, N. & Dubas, J. S. (1992). A longitudinal study of predictors of spatial ability in adolescent females. *Child Development*, 63, 37-46.
- Weinmann, L.L. & Newcombe, N. (1990). Adolescent identity and perceptions of parental relationships. *Journal of Experimental Child Psychology*, 50, 357-369.
- Baenninger, M. A. & Newcombe, N. (1989). The role of experience in spatial test performance: A meta-analysis. *Sex Roles*, 20, 327-344.
- Newcombe, N., Dubas, J. S. & Baenninger, M. A. (1989). Associations of timing of puberty, spatial ability, and lateralization in adult women. *Child Development*, 60, 246-254.
- Newcombe, N. (1988). The paradox of proximity in early spatial representation. *British Journal of Developmental Psychology*, 6, 376-378.
- Berfield, K.A., Ray, W.J., & Newcombe, N. (1986). Sex role and spatial ability: An EEG study. *Neuropsychologia*, 24, 731-735.
- Branch, C.W. & Newcombe, N. (1986). Racial attitude development among young black children as a function of parental attitudes: A longitudinal and cross-sectional study. *Child Development*, 57, 712-721.
- Ward, S.L., Newcombe, N., & Overton, W.F. (1986). Turn left at the church, or three miles north: A study of direction giving and sex differences. *Environment and Behavior*, 18, 192-213.
- Newcombe, N., Bandura, M.M. & Taylor, D.G. (1983). Sex differences in spatial ability and spatial activities. *Sex Roles*, 9, 377-386.
- Cole, P.M. & Newcombe, N. (1983). Interference effects of verbal and imaginal strategies for resisting distraction on children's verbal and visual recognition memory. *Child Development*, 54, 42-50.

- Newcombe, N. & Bandura, M.M. (1983). Effects of age at puberty on spatial ability in girls: A question of mechanism. *Developmental Psychology, 19*, 215-224.
- Newcombe, N. & Liben, L.S. (1982). Barrier effects in the cognitive maps of children and adults. *Journal of Experimental Child Psychology, 34*, 46-58.
- Newcombe, N. & Lerner, J.C. (1982). Britain between the wars: The historical context of Bowlby's theory of attachment. *Psychiatry, 45*, 1-12.
- Ray, W.J., Newcombe, N., Semon, J., & Cole, P.M. (1981). Spatial abilities, sex differences and EEG functioning. *Neuropsychologia, 19*, 719-722.
- Newcombe, N. & Zaslow, M. (1981). Hints and question directives in the speech of 2 1/2-year-old children to adults. *Discourse Processes, 4*, 239-252.
- Branch, C. & Newcombe, N. (1980). Racial attitudes in preschoolers as related to levels of parental civil rights activism. *Merrill-Palmer Quarterly, 26*, 425-428.
- Rogoff, B., Newcombe, N., Fox, N., & Ellis, S. (1980). Transitions in children's roles and capabilities. *International Journal of Psychology, 15*, 181-200.
- Newcombe, N. & Arnkoff, D.B. (1979). Effect of speech styles and sex of speaker on person perception. *Journal of Personality and Social Psychology, 37*, 1293-1303.
- Newcombe, N., Rogoff, B., & Kagan, J. (1977). Developmental changes in recognition memory for pictures of objects and scenes. *Developmental Psychology, 13*, 337-341.
- Huttenlocher, J. & Newcombe, N. (1976). Semantic effects on ordered recall. *Journal of Verbal Learning and Verbal Behavior, 15*, 387-399.
- Rogoff, B., Newcombe, N., & Kagan, J. (1974). Planfulness and recognition memory. *Child Development, 45*, 972-977.

Proceedings

- Xu, Y., Regier, T. & Newcombe, N. An adaptive cue combination model of spatial reorientation. In D.C. Noelle, R. Dale, A.S. Warlaumont, J. Yoshimi, T. Matlock, C.D. Jennings & P.P. Maglio (Eds.), *Proceedings of the 37th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Morden-Snipper, D.R., Dai, T., Booth, J.L., Chang, B.L., Cromley, J.G. & Newcombe, N.S. Cognitive factors and representation strategies in sketching math diagrams. In D.C. Noelle, R. Dale, A.S. Warlaumont, J. Yoshimi, T. Matlock, C.D. Jennings & P.P. Maglio (Eds.), *Proceedings of the 37th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Resnick, I., Shipley, T., Newcombe, N., Massey, C. & Wills, T. (2012). Examining the representation and understanding of large magnitudes using the hierarchical alignment model of analogical reasoning. In N. Miyake, D. Peebles & R.P. Cooper (Eds.), *Proceedings of the 34th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Meadow, N., Uttal, D., Tipton, E. & Newcombe, N. (2011). Training spatial skills: What works, for whom, and for how long? In L. Carlson, C. Hoelscher & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

- Nardi, D., Funk, A. Y., Newcombe, N. S., & Shipley, T. F. (2009). Reorientation by slope cues in humans. *Cognitive Processing, 10*, S260-S262.
- Balcomb, F., Newcombe, N.S., & Ferrara, K. (2009). Convergence and divergence in representational systems: Place learning and language in toddlers. In N. Taatgen et al. (Eds.), *Proceedings of the 31st Annual Conference of the Cognitive Science Society* (pp. 596-601). Austin, TX: Cognitive Science Society.
- Ratliff, K.R. & Newcombe, N.S. (2007). A matter of trust: When landmarks and geometry are used during reorientation. In D.S. McNamara & J.G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Newcombe, N.S. (2006). An adaptive combination approach to spatial representation: Using geometric and featural spatial information. In R. Sun & N. Miyake (Eds.), *Proceedings of the 28th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Ratliff, K.R. & Newcombe, N.S. (2005). Human spatial reorientation using dual task paradigms. In B. Bara, L. Barsalou & M. Bucciarelli (Eds.), *Proceedings of the 27th Annual Cognitive Science Society*, (pp. 1809-1814). Austin, TX: Cognitive Science Society.

Book Reviews

- Newcombe, N.S. (2019). Finding our way. (Essay review of A.D. Ekstrom, H.J. Spiers, V.D. Bohbot & S. Rosenbaum, *Human spatial navigation*.) *Current Biology, 29*, R108-R109.
- Namy, L.L. & Newcombe, N.S. (2008). More than just hand waving. (Essay review of S. Goldin-Meadow, *Hearing gestures: How our hands help us think*). *Journal of Cognition and Development, 9*, 247-252.
- Newcombe, N.S. (2007). Developmental psychology meets the Mommy Wars. (Essay review of NICHD Early Child Care Research Network, *Child care and child development: Results from the NICHD study of early child care and youth development*). *Journal of Applied Developmental Psychology, 28*, 553-555.
- Newcombe, N.S. (2005). Language as destiny? Or not. (Essay review of S. C. Levinson, *Space in language and cognition: Explorations in cognitive diversity*). *Human Development, 48*, 309-314.
- Newcombe, N. (1998). Defining the radical middle. (Essay review of J. Elman et al., *Rethinking Innateness*). *Human Development, 41*, 210-214.
- Newcombe, N. (1991). New directions for research on cognitive style? (Review of T. Globerson & T. Zelniker (Eds.), *Cognitive style and cognitive development*.) *Contemporary Psychology, 36*, 502.
- Newcombe, N. (1989). The study of brain and behavior: Has the marriage been consummated? (Review of J. Stiles-Davis, M. Kritchevsky & U. Bellugi (Eds.), *Spatial cognition: Brain bases and development*.) *Contemporary Psychology, 34*, 752-753.
- Newcombe, N. (1986). The coming of age of adolescence. (Review of M.A. Lloyd, *Adolescence*, and D. Rogers, *Adolescents and youth*.) *Contemporary Psychology, 31*, 810-811.
- Newcombe, N. (1981). The causes of cognitive development. (Review of A.N. Perret-Clermont, *Social interaction and cognitive development in children*.) *Contemporary Psychology, 26*, 606-607.

Newcombe, N. (1980). Beyond nature and nurture. (Review of J.E. Parsons, The psychobiology of sex differences and sex roles.) *Contemporary Psychology*, 25, 807-808.

Tutorials, Commentaries, Reports, Abstracts, Introductions, Editorials, Outreach

BBS commentary with Pablo.

AUTHORS. The future of cognitive development in challenging times. *Journal of Cognition and Development*.

Newcombe, N.S. (2023). The search for the cognitive map. *Proceedings of the National Academy of Sciences*, 120 (15) e2303202120

Gagnier, K.M. & Newcombe, N.S. Spatial enhancements to boost learning of science and math. IBE Science of Learning Portal
<https://solportal.ibe-unesco.org/spatial-enhancements-to-boost-learning-of-science-and-math/> .

Ishikawa, T. & Newcombe, N.S. (2021). Why spatial is special in education, learning, and everyday activities: Overview of a topical collection. *Cognitive Research: Principles and Implications*, 6, Article 20.

Newcombe, N.S. (2019). Linking spatial and mathematical thinking: The search for mechanism. (Commentary). In K.S. Mix & M. Battista (Eds.), *Visualizing mathematics : The role of spatial reasoning in mathematical thought* (pp. 355-360). Springer.

Newcombe, N.S. (2018). Individual variation in human navigation: A primer. *Current Biology*, 28, R1004-R1008.

Newcombe, N.S. (2019). Start strong, plan ahead. In R.J. Sternberg (Ed.), *My Biggest Research Mistake* (pp. 52-54). Sage.

Newcombe, N.S. (2018). If neuroscience needs behavior, what does behavioral science need? *APS Observer*, 31, 21 & 23.

Newcombe, N.S. (2017). Q & A. *Current Biology*, 27.

Weisberg, S.M. & Newcombe, N.S. (2017). Embodied cognition and STEM learning: Overview of a topical collection. *Cognitive Research: Principles and Implications*

Mix, K.S., Newcombe, N.S. & Levine, S.C. (2017). Commentary on Leibovich et al., What next?. *Behavioral and Brain Sciences*, 40.

Newcombe, N.S. (2017). Building spatial skills in preschool. *British Psychologist*, April Issue, 48-51

Newcombe, N.S. (2016). Hand-wired not hard-wired: Natural selection for babies who can learn. In K. Cheng, *How animals think and feel* (pp. 260-261). Santa Barbara: Greenwood.

Newcombe, N.S. (2015). Memory development: Halfway there? *International Journal of Behavioral Development*, 39, 304-305.

Sutton, J.E. & Newcombe, N.S. (2014). The hippocampus is not a geometric module: Processing environment geometry during reorientation. *Frontiers in Human Neuroscience*, 8, 596. doi:

10.3389/fnhum.2014.00596

- Janelle, D.G., Hegarty, M. & Newcombe, N.S. (2014). Spatial thinking across the college curriculum: A report on a specialist meeting. *Spatial Cognition and Computation*, 14, 124-141.
- Weisberg, S.M. & Newcombe, N.S. (2013). Navigating in a three-dimensional world. (Commentary on paper by K. Jeffery et al.) *Behavioral and Brain Sciences*, 36, 568-569.
- Hedges, J. H., Adolph, K. E., Amso, D., Bavelier, D., Fiez, J. A., Krubitzer, L., McAuley, J. D., Newcombe, N. S., Fitzpatrick, S. M. & Ghajar, J. (2013), Play, attention, and learning: How do play and timing shape the development of attention and influence classroom learning?. *Annals of the New York Academy of Sciences*. doi: 10.1111/nyas.12154
- Newcombe, N.S. (2013). Seeing relationships: Using spatial thinking to teach science, mathematics, and social studies. *American Educator*. 26-31, 40.
- Newcombe, N.S. (2013). Educating to use evidence in thinking about education. *Mind, Brain and Education*. 7, 147-150.
- Newcombe, N.S. (2012). Two ways to help students with spatial thinking in geoscience. In Kastens, K.A. & Manduca, C. M. (Eds.), GSA Special Paper 486, *Earth and mind II: A Synthesis of Research on Thinking and Learning in the Geosciences* (pp. 85-86). Geological Society of America Special Papers.
- Newcombe, N.S. (2011). Three families of isms. *Child Development Perspectives*, 5, 171-172.
- Newcombe, N.S. (2011). What is neoconstructivism? *Child Development Perspectives*, 5, 157-160.
- Grossberg, S., Meltzoff, A., Movellan, J. & Newcombe, N. (2010). Social cognition: From babies to robots. (Introduction to special issue). *Neural Networks*. 939.
- Fischer, K.W., Goswami, U., Geake, J. and the Task Force on the Future of Educational Neuroscience (2010). The future of educational neuroscience. *Mind, Brain and Education*, 4, 68-80.
- Newcombe, N.S. (2010). Picture this: Increasing math and science learning by improving spatial thinking. *American Educator*, 29-35, 43.
- Carlson, L., Hoffman, J.E. & Newcombe, N.S. (2010). Spatial reference frames: Examining what and how information is encoded through the integration of cognitive, behavioral, and neuroscience approaches. (Introduction to special issue). *Journal of Experimental Psychology: Learning, Memory and Cognition*, 36, 573-575.
- Newcombe, N.S. (2009, April). APA-SRCD joint task force addresses psychology's role in math and science education. *Developments: Newsletter of the Society for Research in Child Development*, 1, 7.
- Newcombe, N.S. & Bouton, M.E. (2009). Masked reviews are not fairer reviews. *Perspectives in Psychology*, 4, 62-64.
- Newcombe, N.S. (2007, November). Psychology's role in math and science. *Monitor on Psychology*, 8.
- Newcombe, N.S. (2007, October 19). The truth of the Mommy Wars. *Chronicle of Higher Education*, 54, B20.

- Newcombe, N.S. & Uttal, D.H. (2006). Whorf versus Socrates, round 10. *Trends in Cognitive Science*, 10, 394-396.
- Newcombe, N.S. (2006, March 3). A plea for spatial literacy. *Chronicle of Higher Education*, 52, B20. **Reprinted** on the Best Practices section of the Institute for Women in Trades, Technology & Science (IWITTS) website, www.iwitts.com.
- Newcombe, N.S. (2006). A new paradigm for teaching cognitive development: Beyond Piaget and his critics. *SRCD Newsletter*, 49, 4.
- Newcombe, N.S. (2005). Mars and Venus in the classroom. *Psychology Teacher Network*, 15, 7, 12, 17. **Reprinted** in special issue of *Enfance* (2006), 58, 216-222.
- Newcombe, N.S. (2005). Commentary on "The Science of Gender and Science—Pinker Vs. Spelke—A Debate". *Edge: The Reality Club*. <http://www.edge.org/discourse/science-gender.html#nn>.
- Newcombe, N.S. (2003). Some controls control too much. (Commentary on NICHD Early Child Care Research Network article). *Child Development*, 74, 1050-1052.
- Newcombe, N.S. (2002). Beyond the blank slate: Can sociobiology come of age as an empirical science? *Chronicle of Higher Education*, December 13, B10-B11.
- Newcombe, N.S. (2002). Five commandments for APA. *American Psychologist*, 57, 202-205.
- Newcombe, N. S. (2001). A spatial coding analysis of the A-not-B error: What IS "location at A"? (Commentary on Thelen et al.) *Behavioral and Brain Sciences*, 24, 57-58.
- Newcombe, N.S. (2000). So, at last we can begin. (Commentary on D. Uttal, Seeing the big picture: Map use and the development of spatial cognition.) *Developmental Science*, 3, 276-278.
- Newcombe, N. S. (2000). Beginning the decade of behavior (Editorial). *Journal of Experimental Psychology: General*, 129, 1.
- Baenninger, M.A. & Newcombe, N. (1996). Sauce for the goose, sauce for the gander. (Reply to commentaries on Baenninger & Newcombe, 1995). *Learning and Individual Differences*, 8, 65-68.
- Newcombe, N. & Baenninger, M.A. (1996). Sexual-selection accounts of human characteristics: Just-so stories or scientific hypotheses? (Commentary on paper by D. Geary). *Brain and Behavioral Sciences*.
- Newcombe, N., Drummey, A.B. & Lie, E. (1995). Children's memory for early experience. (Introduction to special issue on early memory.) *Journal of Experimental Child Psychology*, 59, 337-342.
- Hawkins, J. & Newcombe, N. (1994). Developing a new research agenda to facilitate innovation in the teaching and learning of science and mathematics. Report to the National Science Foundation
- Newcombe, N. & Baenninger, M. A. (1988). Nature/nurture in male/female mathematical giftedness. (Commentary on paper by C. P. Benbow). *Behavioral and Brain Sciences*, 11, 206.
- Ray, W.J. & Newcombe, N. (1980). Interpreting sex differences in lateralization. (Commentary on paper by J. McGlone). *Behavioral and Brain Sciences*, 3, 246.

Conference Participation

Invited Talks

- Newcombe, N.S. Cognitive maps and mental representation. *European Society for Philosophy and Psychology*, Warsaw, Poland, September 2025.
- Newcombe, N.S. *Event Cognition: Recent Directions and Current Controversies*, Columbia, 2025
- Newcombe, N.S. Charting our way in space and time. *Learning and Plasticity (LaP2024)*, Finland, April 2024.
- Newcombe, N.S. Development of memory generalization and specificity. *Episodic memory development in mammalian species*, Nijmegen, Netherlands, December 2023.
- Newcombe, N.S. Assessing individual differences in building cognitive maps. *iSCAN, 4th DZNE Interdisciplinary Symposium*, Magdeburg, Germany, December 2023.
- Newcombe, N.S. Building a cognitive science of human variation. *Symposium for Individual Differences in Cognition*, San Francisco, November 2023.
- Newcombe, N.S. Development of navigation. PuG, Tübingen, Germany, June 2023.
- Newcombe, N.S. Leveraging species comparisons to understand human development. *36th Annual Winter Conference in Developmental Psychobiology*, Punta Cana, Dominican Republic, January 2023.
- Newcombe, N.S. Leveraging species comparisons to understand human development. *Child and Brain Development (CBD) Program Meeting for CIFAR*, Dublin, October 2022.
- Newcombe, N.S. Charting our way in space and time. *5th Symposium and Advanced Course on Computational Psychiatry and Ageing Research*, Marbach Castle, Germany, August 2022.
- Newcombe, N.S. Charting our way in space and time. *16th International Symposium of Cognition, Logic and Language*. Laboratory for Perceptual and Cognitive Systems, Faculty of Computing, University of Latvia, Riga, August 25, 2022
- Newcombe, N.S. Mentoring. NUMBERS, Kent, Ohio, May 2022.
- Newcombe, N.S. Charting our way in space and time. *Toronto Area Memory Group*, May 2022.
- Newcombe, N.S. Tips from the academic trenches. Diversity Preconference Workshop, *Cognitive Development Society*, Madison WI, April 2022.
- Newcombe, N.S. Spatial thinking underlies scientific and mathematical learning. Plenary talk for the *80th International Scientific Conference of the University of Latvia*, February 2022.
- Newcombe, N.S. Charting a middle way: A neoconstructivist approach to spatial development. In invited symposium, *The Competent Baby, Jean Piaget Society* (virtual), May 2021.
- Newcombe, N.S. The development of navigation. *Royal Institute of Navigation*, London (virtual), April 2021.

- Newcombe, N.S. Learning without remembering? Semantic before episodic memory in development. Plenary talk, *Eastern Psychological Association*, Virtual, March 2021.
- Newcombe, N.S. Affordances and representations: Understanding mental rotation, perspective taking and spatial reorientation. Plenary Talk, *8th Conference on Cognition Research of the Israeli Society for Cognitive Psychology* – Virtual, February 2021.
- Newcombe, N.S. Semantic before episodic memory in development: Constraints on memory models. *Virtual Psychonomic Society*, November 2020.
- Newcombe, N.S. Science of learning: What have we learned? Master Lecture, *American Psychological Association*, Chicago, IL August 2019.
- Newcombe, N.S.. Science of learning: What have we learned? *Association for Psychological Science*, Washington, DC May 2019.
- Newcombe, N.S. The mathematical brain: Lessons for math education? In International State-of-the-Art Symposium: Recent Connections between Brain, Neuroscience, and Education. *American Educational Research Association*, Toronto, ON, April 2019.
- Newcombe, N.S. Cognitive maps: Some people make them, some people struggle. *XR Advance Webinar Series*, April 2019.
- Newcombe, N.S. Making space. Howard Crosby Warren Medal Award Address, *Society of Experimental Psychologists*, Rutgers University, March 2019.
- Newcombe, N.S. Relational binding and pattern separation across the life span. *iSCAN, 2nd DZNE Interdisciplinary Symposium on Spatial Cognition in Aging & Neurodegeneration*, Magdeburg, Germany, November 27-29, 2018. .
- Newcombe, N.S. Assessing individual differences and malleability in navigational skills. *2nd Interdisciplinary Navigation Symposium*, Mont Tremblant, Canada, June 2018.
- Newcombe, N.S. Cognitive maps, real maps and STEM learning. *Latin American Summer School for Education, Cognitive and Neural Sciences*. San Esteban, Chile, June 2018.
- Newcombe, N.S. Development of episodic memory: A componential approach. *Context and Episodic Memory Symposium*, Philadelphia, May 2018.
- Newcombe, N.S. GPS in our heads: What do behavioral and neural data on navigation offer to geography educators? *American Association of Geographers*, New Orleans, April 2018.
- Newcombe, N.S. Navigation and the developing brain. *The Company of Biologists*, Plaka Litochoro, Greece, March 2018.
- Newcombe, N.S. Spatial bases of elementary mathematics. *SERC Spatial Reasoning Conference*, University of Canberra, Australia, January 2018.
- Newcombe, N.S. Developmental origins of cognitive mapping. *Society of Experimental Psychologists*, Nashville TN, March 2017.
- Newcombe, N.S. Do people form cognitive maps? An individual differences approach. *1st Interdisciplinary Navigation Symposium*, Bad Gastein, Austria, June 2016.

- Newcombe, N.S. Thinking about quantity: The intertwined development of spatial and numerical cognition. *Heterogeneous Contributions to Numerical Cognition*, Ghent, Belgium, June 2016.
- Newcombe, N.S. Using neuroscience in education: Are we ready? *Center for School Study Councils*, Philadelphia, May 2016.
- Newcombe, N.S. Science of learning. *Education Writers Association*, Boston, April 2016.
- Newcombe, N.S. Development of episodic memory: Which dog did I see, where and when? *Society of Experimental Psychologists*, New York City, April, 2016.
- Newcombe, N.S. Modeling adaptive combination in reorientation: What is the role of language? *Spatial Language Workshop*, San Diego, CA, January 2016.
- Newcombe, N.S. New ways of thinking about cognitive development: Implications for teaching. *38th Annual National Institute on the Teaching of Psychology*, St. Petersburg Beach, Florida, January 2016.
- Newcombe, N.S. Evidence-based teaching in the earth sciences: Where are we now? *Earth Educators' Rendezvous*, Boulder, CO, July 2015.
- Newcombe, N.S. Enhancing spatial learning for success in the STEM disciplines. *International Symposium on Science for Education*, Rio de Janeiro, July 2015.
- Newcombe, N.S. Picture this: Teaching and learning mathematics using spatial thinking. *Ontario Association for Mathematics Education*, Toronto, May 2015.
- Newcombe, N.S. Smart babies, not-so-smart children: What's up? *Midwestern Psychological Association*, Chicago, May 2015.
- Newcombe, N.S. Relations between episodic memory and spatial memory development. In "New Ideas About Memory Development", *Psychonomic Society*, Long Beach CA, November 2014.
- Newcombe, N.S. Remembering spatial location: Extending the category adjustment model to the real world. *Spatial Cognition 2014*, Bremen, Germany, September 2014.
- Newcombe, N.S. Space, development, spatial development. *Perspectives on Spatial Cognition: 10th International Symposium of Cognition, Logic and Communication*. University of Latvia, September 2014.
- Newcombe, N.S. Spatial development. *Vespucci Institute on Brain and Space*, Lisbon, Portugal, September 2014.
- Newcombe, N.S. Thinking about quantity: The intertwined development of spatial and numerical cognition. *Workshop on Making Models: Spatial Visual Reasoning in the Classroom and in Educational Research*. Fields Institute, University of Toronto, August 2014.
- Newcombe, N.S. Thinking about quantity: The intertwined development of spatial and numerical cognition. *European Association for Research on Learning and Instruction, Special Interest Group on Educational Neuroscience*, Gottingen, Germany, June 2014.

- Newcombe, N.S. Resolving the nativist-empiricist debate: A neoconstructivist approach to cognitive development *Association for Psychological Science*, San Francisco, CA, May 2014.
- Newcombe, N.S. Spatializing the curriculum from preschool through college. In Presidential Symposium "Science of Learning, the Education Sciences—Strange Bedfellows or All in the Family?" *American Educational Research Association*, Philadelphia, PA, April 2014.
- Newcombe, N.S. Enhancing spatial learning for success in the STEM disciplines. *Latin American Summer School for Education, Cognitive and Neural Sciences*. Punta del Este, Uruguay, March 2014.
- Newcombe, N.S. Challenging spatial terms in learning science and mathematics. *Spatial Language Workshop*, San Diego, CA, January 2014.
- Newcombe, N.S. Studying development comparatively. *Comparative Cognition Society*, Toronto, November 2013.
- Newcombe, N.S. Lecture series on spatial development. *International Spatial Cognition Summer Institute*. UC-Santa Barbara, August 2013.
- Newcombe, N.S. Lecture series on spatial development. *20th International Summer School in Cognitive Science*, New Bulgarian University, Sofia, Bulgaria, July 2013.
- Newcombe, N.S. Enhancing spatial learning for success in the STEM disciplines. *LearnLab's 2nd Annual Learning Science Workshop: Research and Innovation for Enhancing Achievement and Equity*. Pittsburgh, PA, June 2013.
- Newcombe, N.S. The development of magnitude estimation. *Translating Mind, Brain and Education Across Disciplines, Cultures and Contexts*. Quito, Ecuador, June 2013.
- Newcombe, N.S. Training spatial thinking and reasoning skills in students for success in STEM. *Learning and the Brain*. Arlington, VA, May 2013.
- Newcombe, N.S. Improving science learning in middle school. *Congressional Briefing: From the Lab to the Classroom: IES Research to Improve Our Nation's Math and Science Achievement*. Washington, DC, May 2013.
- Newcombe, N.S. Remembering spatial location: Adaptive combination models. *Spatial Memory: Bayes and Beyond*. Richmond, VA, May 2013.
- Newcombe, N.S. Adaptive combination in spatial development. *Views by Two* with Elizabeth S. Spelke, chaired by Lynn S. Liben, "Starting Points and Change in Spatial Development: Contrasting Perspectives". *Society of Research in Child Development*, Seattle, WA, April 2013.
- Newcombe, N.S. Spatial skills and success in STEM: Thinking about gender differences. *2013 Chicago Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice*. Chicago, February 2013.
- Newcombe, N.S. Remembering spatial location: Bayesian models. *Spatial Language Workshop*, San Diego, CA, January 2013.
- Newcombe, N.S. Developing an integrated mind: Strong beginnings, stronger endpoints. *Deutschen Gesellschaft für Psychologie*, Bielefeld, September 2012.

- Newcombe, N.S. Play and educational outcomes. In *Workshop on Play, Attention, and Learning: How Does Play and Timing Shape the Development of Attention and Facilitate Classroom Learning?* New York Academy of Sciences, June 2012.
- Newcombe, N.S. From lab to school, and school to lab: Spatial extent, spatial scaling, measurement skills and more. Talk in *Realism to Relevance: An Ecological Approach to Perception, Action, and Cognition A Festschrift to Honor the Scientific and Mentoring Contributions of Herbert L. Pick, Jr.* Minneapolis, June 2012.
- Newcombe, N.S. Defining core knowledge: Relative magnitude estimation. In *Workshop on Core Knowledge, Language, and Culture*, Lorentz Center of Leiden University, May 29-June 1 2012.
- Newcombe, N.S. Spatial skills and success in STEM: Thinking about gender differences. Plenary talk at *National Center for Women & Information Technology (NCWIT)*, Chicago, May 2012.
- Sinton, D. & Newcombe, N.S. Space, place and relationships: Exploring spatial cognition in 2012 and beyond. *NCGE Seminar*, April 2012.
- Newcombe, N.S. Barriers to evidence-based education. *Latin American Summer School for Education, Cognitive and Neural Sciences*. Calafate, Argentina. March 2012.
- Newcombe, N.S. Spatial learning and education. *Latin American Summer School for Education, Cognitive and Neural Sciences*. Calafate, Argentina. March 2012.
- Newcombe, N.S. What is neoconstructivism? *Latin American Summer School for Education, Cognitive and Neural Sciences*. Calafate, Argentina. March 2012.
- Newcombe, N.S. Developing an integrated mind. Keynote Address, *L.O.V.E. Conference*, Niagara Falls, ON, February 2012.
- Newcombe, N.S. Increasing spatial learning in formal and informal settings. Innovation in education: Connecting how we learn to educational practice and policy. *NSF-OECD Conference*, Paris, France, January 2012.
- Newcombe, N.S. Geometry: A neoconstructivist view. *Neurospin*, Saint-Aubin/Saclay, France, January 2012.
- Newcombe, N.S. Developing an integrated mind. Keynote Address, *Psychonomic Society*, Seattle, November 2011.
- Newcombe, N.S. Spatial learning in development. Invited talk at the *6th Annual Eleanor M. Saffran Cognitive Neuroscience Conference*, Temple University, September 2011.
- Newcombe, N.S. The development of spatial representation and reasoning. Plenary address at the *Conference on Spatial Information Theory (COSIT 2011)*, Belfast, Maine, September 2011.
- Newcombe, N.S. Using research on analogical reasoning, diagrammatic reasoning, and prior knowledge to improve middle school science outcomes. In Invited Symposium on Applying Cognitive Principles to Improve Science and Math Curricula. *Society for Research on Educational Effectiveness*, Washington, DC, September 2011.

- Newcombe, N.S. Some generalizations about spatial development. *Geographic Thinking Workshop*, Washington, D.C. June 2011.
- Newcombe, N.S. The future of psychology. EPA Past Presidents' Panel, *Eastern Psychological Association*, Cambridge, MA, March 2011.
- Newcombe, N.S. The whys, whats and wherefores of spatial development. *Episteme-4*, Mumbai, India, January 2011.
- Newcombe, N.S. Early education for spatial learning. *Spatial Cognition 2010*, Mount Hood, Oregon, August 2010.
- Newcombe, N.S. The geometric module debate. *Transregional Collaborative Research Center SFB/TR 8 Spatial Cognition* (U Bremen, U Freiburg) and *International Quality Network on Spatial Cognition*. June 18, 2010.
- Newcombe, N.S. Early education for spatial intelligence: Why, what and how. *Haus der Wissenschaft*, Bremen. June 17, 2010.
- Newcombe, N.S. Thinking about spatial thinking: New typology, new assessments. Workshop on *Studying visual and spatial reasoning for design creativity: Design science, computer science, cognitive science and neuroscience approaches: The state of the art*. Aix-en-Provence, June 14-15, 2010.
- Newcombe, N.S. The nativist-empiricist controversy in the context of recent research on spatial development. *12th Annual Undergraduate Summer Workshop in Cognitive Science and Cognitive Neuroscience*, University of Pennsylvania, June 6-19, 2010.
- Newcombe, N.S. Spatial navigation and episodic memory: Clues to linkage from early development? *Society of Experimental Psychologists*, Philadelphia, April 30, 2010.
- Newcombe, N.S. A. Shared and unique processes in spatial development. Paper presented as part of invited symposium on Darwin's legacy, *Psychonomic Society*, Boston MA 2009.
- Newcombe, N.S. So many myths, so little time. Presentation to the Gordon Conference, *Visualization in Science & Education: Revealing Nature, Generating Insight*, Oxford, United Kingdom, July 2009.
- Newcombe, N.S. Educating spatial intelligence: The right questions, and some answers. Keynote address at the *International Mind, Brain and Education Society*, Philadelphia, PA, May 2009.
- Newcombe, N.S. Women hate maps, men won't ask for directions: Fact or myth? Psi Chi Distinguished Lecture, *Association for Psychological Science*, San Francisco, CA, May 2009.
- Newcombe, N.S. Improving spatial visualization: The search for mechanism. Invited Talk at the *Spatial Thinking and Science Learning Conference*, Evanston, IL 60201.
- Newcombe, N.S. Educating students to use evidence in thinking about developmental psychology. Plenary Address at the 2009 SRCD Developmental Science Teaching Institute. *Society for Research in Child Development*, Denver, CO, April 2009.
- Newcombe, N.S. Increasing spatial intelligence and learning: How, why and how much? Presidential Address to the *Eastern Psychological Association*, Pittsburgh, PA, March 2009.

- Newcombe, N.S. Educating spatial intelligence. Invited Talk to the *National Geographic Society, Workshop on Spatial Learning in Geography*, October 2008.
- Newcombe, N.S. Uses and abuses of evolutionary psychology. Keynote Address, *Western Pennsylvania Undergraduate Psychology Conference*, Erie, PA, April 2008.
- Newcombe, N.S. Uses and abuses of evolutionary psychology. G. Stanley Hall Lecture, *Western Psychological Association*, Irvine, CA, April 2008.
- Newcombe, N.S. Spatial adaptation: Origins and development. In Invited Symposium: Mechanisms of cognitive development: Domain-general learning or domain-specific constraints? *Psychonomic Society*, Long Beach, CA, November 2007.
- Newcombe, N.S. Uses and abuses of evolutionary psychology. G. Stanley Hall Lecture, *New England Psychological Association*, Danbury, CT, October 2007.
- Newcombe, N.S. How minds develop: Cutting the nativist knot. G. Stanley Hall Award Talk, *American Psychological Association*, San Francisco, August 2007.
- Newcombe, N.S. Modularity vs. adaptive combination: Approaches to the development of mind in cultural and neural context. Presentation to *Workshop on Culture, Mind, Brain and Development*, Rensselaerville Conference Center, June 2007.
- Newcombe, N.S. Are men better spatial visualizers? In Invited Symposium on Learning Principles—What We Know About Learning. *Association for Psychological Science*, Washington DC, May 2007.
- Newcombe, N.S. Male/female responsiveness to spatial training. Talk given to the *Spatial Skills Curriculum Workshop*, Michigan Technical University, Houghton, Michigan, May 2007.
- Newcombe, N.S. Uses and abuses of evolutionary psychology. G. Stanley Hall Lecture, *American Psychological Association*, New Orleans, August 2006.
- Newcombe, N.S. Objects, locations, and the binding problem. Talk given at the 14th Altenberg Workshop in Theoretical Biology, *The New Cognitive Sciences: Bring Evolution and Development to Bear on Mind and Brain*. Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria, June 15-18, 2006.
- Newcombe, N.S. The role of action in children's adaptive combination of spatial information. In Invited Symposium on How Symbols and Actions Influence Spatial Thinking. *Midwestern Psychological Association*, May 2006.
- Newcombe, N.S. What I did one summer vacation (and beyond). *The Art of Science: A Festschrift in Honor of Janellen Huttenlocher*. Chicago, September 2005.
- Newcombe, N.S. How education shortchanges spatial intelligence: A problem and its remedies. Division 3 Invited Address, *American Psychological Association*, Washington, DC, August 2005.
- Newcombe, N.S. So, what's the question, Nora? A belated answer. Talk invited by Division 7 for the Mentor Award symposium for Dr. Jerome Kagan, *American Psychological Association*, Washington, DC, August 2005.

- Newcombe, N.S. Back to basics: What's actually wrong with good old-fashioned cognitive development? Conference on *Connectionism and Dynamic Systems Approaches to Development: On the Cusp of a New Grand Theory or Still Too Distributed?* June 21, 2005, Iowa City, IA.
- Newcombe, N.S. What do we mean when we say modularity? Master Lecture, *Society for Research in Child Development*, Atlanta, GA, April 2005.
- Newcombe, N.S. A new paradigm for teaching cognitive development: Beyond Piaget and his critics. First Biennial SRCD Developmental Science Teaching Institute, *Society for Research in Child Development*, Atlanta, GA, April 2005.
- Newcombe, N.S. Recent evidence regarding modularity in human spatial orientation. Paper in Presidential Integrative Symposium: Interdisciplinary perspectives on spatial learning and cognition. *Eastern Psychological Association*, Boston, March 2005.
- Newcombe, N.S. Developing reorientation: Modular or not? Paper presented in invited symposium, Putting perspective in things: The role of point of view in spatial reasoning. *Psychonomic Society*, Minneapolis, November 2004.
- Newcombe, N.S. Statistics, assumptions and day care: Why it can be hard to use evidence to make policy decisions. Part of Presidential Symposium, The Day Care Scare, *American Psychological Association*, Honolulu, August 2004.
- Newcombe, N.S. One round in the nativist-empiricist debate: Is there a geometric module? George Miller Award talk, *American Psychological Association*, Honolulu, August 2004.
- Newcombe, N.S. Invited symposium: Current status of the nativism-empiricism debate. Organized symposium and gave paper entitled: Claims of a geometric module: Squaring theory and evidence. *Conference on Human Development*, Washington, DC, April 2004.
- Newcombe, N.S. Cracking the code: The enigma of sex differences in sociobiology. Plenary address at the *American Psychological Association*, Toronto, August 9, 2003.
- Newcombe, N.S. Some unanswered questions about a sociobiological theory of sex differences in spatial ability. Invited address to the *Eastern Psychological Association*, March 2003.
- Newcombe, N.S. Evidence for and against a geometric module: The roles of language and action. Presented at Minnesota Symposium on Child Development organized by J. Rieser, J. Lockman & C. Nelson, *Action as an organizer of learning and development*, October 2002.
- Newcombe, N.S. Some unanswered questions about a sociobiological theory of sex differences in spatial ability. Division 7 Presidential Address, *American Psychological Association*, Chicago, IL, August 2002.
- Newcombe, N. Invited speaker for "Science in the public eye: Issues and controversies in the communication of scientific findings." *Journal Editors' Consortium Meeting*, March 26-28, 2000.
- Newcombe, N. S. Sex differences in cognition: Belief, theory and current knowledge. Invited talk for symposium series on *The Developing Child: Brain and Behavior*, sponsored by the Erikson Institute and the University of Chicago, March 3, 2000.
- Newcombe, N. Emergentism in cognitive development. Invited address, *Inaugural Meeting of the Cognitive Development Society*, Chapel Hill, NC, October 1999.

- Newcombe, N.S. Making space: Taking cognitive development one domain at a time. Invited address as part of the *Mind, Brain and Behavior* symposium series, APA, August, 1999, Boston, MA.
- Newcombe, N.S. Developments in research on memory for early childhood. Invited presentation to Research Experience for Undergraduates Program, Skidmore College, June 28-29, 1999.
- Newcombe, N.S. The future of cognitive development. Invited presentation at conference on "Stability and change in developmental psychology", held to celebrate the career of Professor Jerome Kagan, Cambridge, MA, May 21, 1999.
- Newcombe, N.S. Invited paper at Specialists' Meeting of the Varenus Project's *Conference on Cognitive Models of Geographic Space*, sponsored by the National Center for Geographic Information and Analysis, NSF. February 18-20, 1999, Santa Barbara, CA.
- Newcombe, N.S. Invited paper at the *Johnson and Johnson Pediatric Round Table 1999: The Role of Experience in Infant Development*. Jan. 6-10, 1999, Palm Beach, Florida.
- Newcombe, N. Remembering our early childhoods: When, how and why (or why not). Invited address to the *American Psychological Society*, May 1998.
- Newcombe, N.S. Starting points and change in the study of spatial development. Invited address to Division 7, *American Psychological Association*, Chicago, August 1997.
- Newcombe, N. Development of spatial representation. Part of invited symposium organized by N. Newcombe, "Origins of cognitive competence", *Psychonomics Society*, St. Louis, November 1994.
- Newcombe, N., Bullock, A. & Lie, E. Children's early memories: How similar is "infantile amnesia" to real amnesia? Invited paper at the *Midwestern Psychological Association*, Chicago, May 1994.
- Newcombe, N. The paradox of proximity in early spatial representation. Invited presentation to *Conference on Landmarks in the Development of Spatial Representations*, Arizona State University, February 1988.
- Newcombe, N. & Baenninger, M. A. Gender and spatial ability: Biological and experiential hypotheses. Paper presented as part of invited symposium, "Gender and cognitive skills: Cross-cultural and ecological perspectives." *American Association for the Advancement of Science*, Boston, February 1988.
- Newcombe, N. & Dubas, J.S. Biological-psychosocial interactions in the development of sex-related differences in spatial ability. Invited presentation to *Conference on Biological-Psychosocial Interactions in Early Adolescence: A Life-Span Perspective*, Pennsylvania State University, May 1984.
- Huttenlocher, J. & Newcombe, N. The child's representation of information about location. Invited presentation to the *Carnegie-Mellon Symposium*, May 1983.
- Newcombe, N. Developmental changes in cognitive maps: Facts, artifact or none of the above? Invited paper to *Midwestern Psychological Association*, Detroit, May 1981.

Colloquia

2025—Carnegie Mellon University, University of Copenhagen
 2024—Johns Hopkins University, Brown University
 2023—University of California-San Diego (Norman Anderson Lecture), University of Uppsala, University of Winnipeg, MPI-Human Development
 2022-- University of Chicago, Cornell University (Gibson Lecture), Eotvos Lorand University (Hungary), Norwegian Center for Mathematics Education (NTNU)
 2021 – Queen Mary University London, Tufts University, University College London, UC-Santa Barbara (Golledge Lecture)
 2020 – Max Planck Institute-Berlin (Baltes Lecture)
 2019 -- University College London, Downstate Medical Center
 2018—University of Melbourne, Macquarie University, University of New South Wales, University of Otago, Otago Memory Group, Syracuse University (Slepecky Lecture), UC-Davis CMB Focus Group
 2017---Temple Geography Dept., Durham University, Max Planck Institute-Berlin, University of Chicago
 2016—Gallaudet University, Boston College, University of Wisconsin
 2015—University College London, UC-Berkeley, Kent State, University of Western Ontario
 2014---Villanova, Rutgers, ETH Zurich, University of Lausanne, Northern Illinois, University of Pennsylvania (Center for Cognitive Neuroscience)
 2013—Georgia State
 2012—Florida International University, Pennsylvania State University (Geography), University of Western Ontario, University of Bern
 2011—Columbia University, University of California-Berkeley, University of Chicago (Education), University of Kansas (Visiting Scholar)
 2010—University of Chicago (Psychology), Radcliffe Institute, Lehigh Valley Association of Independent Colleges
 2009—Brown University (Schlosberg Lecture), Johns Hopkins, Lehigh University, University of Pennsylvania (IRCS), UC-Santa Barbara
 2008— Robert Wood Johnson Medical School, UC-Davis, UC-San Diego, University of Colorado, University of Delaware, Wesleyan University
 2007—Georgetown University, Ohio State University, Suffolk University
 2006—Cornell, Washington University, University of Arizona, University of Maryland
 2005---Carnegie-Mellon, Harvard, Johns Hopkins, Rutgers-Camden
 2004—Ursinus College
 2003-- Brooklyn College, Hunter College, Rutgers, Yale
 2002—NYU, University of Pennsylvania, University of Texas at Dallas, University of Toronto
 2001—University of Maryland
 2000—Lehigh, McMaster, Princeton, University of Chicago, University of Iowa
 1999—NYU, Princeton, University of Delaware
 1998—Emory, Harvard, Robert Wood Johnson Medical School
 1997—Northwestern, Pennsylvania State University, Villanova
 1996—Bryn Mawr, Community College of Philadelphia, LaSalle, University of Minnesota
 1995-- University of Delaware
 1994—NYU, University of Illinois
 1993-- University of Pennsylvania
 1992-- Arizona State University, University of Arizona
 1988—Concordia, University of Maine
 1986—Dartmouth, Rutgers, Tulane
 1985-- University of Pennsylvania
 1983—University of Maryland
 1982---Bryn Mawr
 1980—Bucknell
 1979—Lycoming College

Refereed Conference Papers and Posters

- Newcombe, N.S. The component structure of memory during development. *MDRS*, Montreal, October 2025.
- Lader, J. L., Nguyen, K.V., & Newcombe, N.S. Exploring individual differences in navigation: Assessing convergence between real-world and virtual paradigms. *Spatial Cognition 2024*, Dublin, June 2024.
- Brucato, M., Chein, J. & Newcombe, N.S. Relations between spatial, cognitive, and affective perspective taking. *Spatial Cognition 2024*, Dublin, June 2024.
- Kus, M. & Newcombe, N.S. Emerging trajectory for disembedding g: An online educational program for spatial thinking in a context of visual arts and mathematics education. *Spatial Cognition 2024*, Dublin, June 2024.
- Silla, E. M., Viegut, A. A., Redican, E., Barbieri, C. A., Resnick, I., Newcombe, N. S., & Jordan, N.C. Pathways to early success with fractions and their relation to cognitive and mathematical skills. *Mathematical Cognition and Learning Society Conference*, Washington, DC, US, June 2024.
- Redican, E., Lopiccolo, D., Viegut, A. A., Resnick, I., Newcombe, N. S., & Jordan, N.C. Effects of playful learning activities on first graders' early fraction knowledge. *Mathematical Cognition and Learning Society Conference*, Washington, DC, US, June 2024.
- Viegut, A. A., Resnick, I., Barbieri, C. A., Newcombe, N. S., & Jordan, N.C. First graders' informal fraction knowledge predicts math achievement two school years later. *Mathematical Cognition and Learning Society Conference*, Washington, DC, US, June 2024.
- Doner, S., Nguyen, K.V., Newcombe, N.S. & Olson, I.R. Investigating the neural bases of episodic memory and navigation in children and young adults. *Cognitive Neuroscience Society*, Toronto, April 2024.
- Litwin, J.L., Cohen, S.C., Olson, I.R., Newcombe, N.S., Hill, K.A. White matter microstructure and autobiographical memory in early childhood. *Social and Affective Neuroscience Society*, Toronto, April 2024.
- Foley, J.M., Tani, N., Leong, J.K., Hoffman, L.J., Hill, K., Litwin, J., Newcombe, N.S., Olson, I.R. Counting connections: Investigating math skills and white matter in children. *Eastern Psychological Association*, Philadelphia, PA, March 2024.
- Hill, K., Foley, J., Tani, N., Leong, J., Litwin, J., Newcombe, N.S., & Olson, I.R. White matter microstructure and narrative proficiency in typically developing children. *Eastern Psychological Association*, Philadelphia, PA, March 2024.
- Wilson, J., Lader, J.L., Nguyen, K.V., & Newcombe, N.S. The real-world validity of navigational performance in a virtual environment. *Eastern Psychological Association*, Philadelphia, PA, March 2024.
- Tansan, M. & Newcombe, N.S. Virtual Copetown: Integrating spatial relationships across separately learned routes. In symposium, Finding the Way: Advances in Spatial Navigation Research, *Psychonomic Society*, San Francisco, November 2023.
- Lader, J.L., Nguyen, K.V. & Newcombe, N.S. Exploring individual differences in navigation: Assessing

- convergence between real-world and virtual paradigms. *Symposium for Individual Differences in Cognition*, San Francisco, November 2023.
- Arantes de Oliveira Campos, G., Nguyen, K., Hoffman, L., Jobson, K., Erardi, J., Newcombe, N. & Olson, I. Does the fornix support episodic memory and spatial navigation throughout development? A DTI investigation. *Society for Neuroscience*, Washington, DC., November 2023.
- Nguyen, K. V., Erardi, J. J., Arantes de Oliveira Campos, G., Newcombe, N. S., Olson, I. R. Hippocampal subfields contributions to the co-development of episodic and spatial memory. *Society for Neuroscience*, Washington, DC., November 2023.
- Lader, J.L., Nguyen, K.V., & Newcombe, N.S. Paradigms for assessing individual differences in navigation: Do they converge? *Society for Neuroscience*, Washington, DC., November 2023.
- Litwin, J.L., Cohen, S., Newcombe, N.S., & Olson, I.R. Decentering and theory of mind in early childhood. *Society for the Study of Human Development*, Philadelphia, PA, October 2023.
- Karjack, S., Ngo, C.T., Storjohann, K. & Newcombe, N.S. Home Sweet Home: Relations between episodic and semantic memory in childhood. *Flux*, Santa Rosa, CA, September 2023.
- Karjack, S., Ngo, C.T., Storjohann, K. & Newcombe, N.S. Home Sweet Home: Relations between episodic and semantic memory in childhood. In symposium on Interactions of Existing Knowledge and Memory for New Information in Development and Aging: What Supports What? *ESCoP*, Porto, Portugal, September 2023.
- Tian, J., Bennett-Pierre, G., Tavassolie, N., Zhang, X., D'Antonio, E., Sylverne, L., Newcombe, N., Weinraub, M., Hindman, A., Newton, K. & Gunderson, E. A month-long parent-led spatial intervention. *Mathematics Cognition and Learning Society Conference*, Loughborough, UK, June 2023.
- Tavassolie, N., Sylverne, L., D'Antonio, E., Newcombe, N., Weinraub, M., Gunderson, E. Using books to improve mental rotation skills in 4- and 5-year-old children. *Mathematics Cognition and Learning Society Conference*, Loughborough, UK, June 2023.
- Viegut, A. A., Resnick, I., Miller-Cotto, D., Newcombe, N. S., & Jordan, N. C. Informal fraction knowledge in first grade supports later mathematics achievement. *Mathematics Cognition and Learning Society Conference*, Loughborough, UK, June 2023.
- Redican, E., Turski, T., Viegut, A. A., Resnick, I., Newcombe, N. S., & Jordan, N.C. Do playful math activities support fraction learning in first graders? *Mathematics Cognition and Learning Society Conference*, Loughborough, UK, June 2023.
- Karjack, S., Ngo, C.T., Storjohann, K. & Newcombe, N.S. Home Sweet Home: Relations between episodic and semantic memory in childhood. *Association for Psychological Science*, Washington, DC, May 2023.
- Nguyen, L., Karjack, S. Frazier, M., Cohen, S., Olson, I., Newcombe, N., 2023. The relationship between narrative skill and elaborative talk in young children. *Association for Psychological Science*, Washington, DC, May 2023.
- Nguyen, K. V., Newcombe, N. S. & Olson, I. R. The Temple Tour: Neural coding of episodic and spatial memory in children and young adults. *LearnMem*, Huntington Beach CA, April 2023.

- Karjack, S., Ngo, C.T., Storjohann, K. & Newcombe, N.S. Home Sweet Home: Relations between episodic and semantic memory in childhood. *LearnMem*, Huntington Beach CA, April 2023.
- Brucato, M. G., Chein, J., & Newcombe, N. S. Cognitive, affective, and spatial perspective-taking: Shared or distinct processes? *Psychonomic Society Annual Meeting*, Boston, MA, Nov 2022.
- Tansan, M., Shipley, T. F., & Newcombe, N. S. Virtual Copetown: Integrating spatial relations across separately learned routes. *Psychonomic Society Annual Meeting*, Boston, MA, Nov 2022.
- Nguyen, K. V., Erardi, J. J., Popal, H., Brunec, I. K., Olson, I. R., & Newcombe, N. S. The Temple Tour: Neural coding of episodic and spatial memory in children and young adults. Nanosymposium talk at *Society for Neuroscience*, San Diego, CA, Nov 2022.
- Campos, G. A. O., Nguyen, K. V., Hoffman, L. J., Jobson, K. R., Erardi, J. J., Newcombe, N. S., & Olson, I. R. Relating the fornix to episodic memory and spatial navigation in development. *Society for Neuroscience*, San Diego, CA, Nov 2022.
- Brunec, I. K., Peer, M., Nguyen, K. V., Hendricks, S. A., Epstein, R. A., & Newcombe, N. S. Individual differences in spatial representations used for goal-directed navigation. *Society for Neuroscience*, San Diego, CA, Nov 2022.
- Nguyen, K. V., Johnson, E. G., Brunec, I. K., Olson, I. R., & Newcombe, N. S. The Temple Tour: Neural coding of episodic and spatial memory in children and young adults. *Flux Congress*, Paris, Sept 2022.
- Tansan, M., Shipley, S., & Newcombe, N. S. Neighborhoods, directions and distances: Segmentation effects in a real-world city. *Cognitive Science Society*, Toronto, Jul 2022.
- Tani, N., Olson, I.R., & Newcombe, N.S. How curiosity enhances memory and learning in young childhood: Pilot study design. Poster presented at *International Mind, Brain and Education Society*, Montréal, Quebec, Canada, July 2022.
- Kassan, E.B., Miller-Cotto, D., Wambach, D., Khanijou, N., Jordan, N.C., Newcombe, N., & Resnick, I. Cognitive correlates of first graders' fraction knowledge. *Mathematical Cognition and Learning Society*, Antwerp, Belgium, June 2022.
- Tavassolie, N., Tian, J. Bennett-Pierre, G., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K. & Gunderson, E.A. Measuring the spatial home learning environment: Initial test of the spatial toys and activities checklist (STAC). *Mathematical Cognition and Learning Society*, Antwerp, Belgium, June 2022.
- Tian, J., Tavassolie, N., Bennett-Pierre, G., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K. & Gunderson, E.A. Growth mindset message influences parents' choices of games. *Mathematical Cognition and Learning Society*, Antwerp, Belgium, June 2022.
- Brucato, M., Newcombe, N.S., Chein, J.M. White matter pathways associated with theory of mind support spatial perspective taking. *Cognitive Neuroscience Society*, San Francisco, April 2022.
- Benear, S.L., Olson, I.R., & Newcombe, N.S. Evaluating the neural signatures of event segmentation and memory in children. *Cognitive Neuroscience Society*, San Francisco, April 2022.
- Karjack, S., Ngo, C.T., & Newcombe, N.S. Home Sweet Home: Relations between episodic and semantic

- memory in childhood. *Cognitive Development Society*, Madison WI, April 2022.
- Miller-Cotto, D., Kassan, E., Wambach, D., Resnick, I., Newcombe, N.S., & Jordan, N. Assessing early informal fraction knowledge. *Cognitive Development Society*, Madison WI, April 2022.
- Tian, J., Ren, C., Newcombe, N.S., Weinraub, M., Vandell, D., & Gunderson, L. Tracing the origins of the STEM gender gap: Childhood spatial skills contribute to women's underrepresentation in STEM college majors. *Cognitive Development Society*, Madison WI, April 2022.
- Beneat, S.L., Olson, I.R., & Newcombe, N.S. Evaluating the neural signatures of event segmentation and memory in children. *Cognitive Development Society*, Madison WI, April 2022.
- Frazier, M.R., Karjack, S., Masi, G., Johnson, E.G., Olson, I.R., & Newcombe, N.S. Storytelling and autobiographical reminiscing in young children. *Cognitive Development Society*, Madison WI, April 2022.
- *Frazier, M.R., *Karjack, S., Johnson, E.G., Newcombe, N.S., & Olson, I.R. The story of me: The relationship between narrative skill and autobiographical reminiscing in young children. *Psychonomic Society*, Virtual, November 2021.
- Brunec, I.K., Nantais, M., Sutton, J.E., Epstein, R.A., & Newcombe, N.S. Spatial memories of new environments are affected by patterns of free exploration. *Psychonomic Society*, Virtual, November 2021.
- Nguyen, K.V., Newcombe, N.S., & Olson, I.R. The Temple Tour: Relating episodic memory and spatial navigation in children and adults. *Psychonomic Society*, Virtual, November 2021.
- Tansan, M., Shipley, T.F., & Newcombe, N.S. Spatial coding of a city: Segmentation of a city affects its cognitive representation. *Psychonomic Society*, Virtual, November 2021.
- Beneat, S.L., Horwath, E.A., Cowan, E., Camacho, M.C., Ngo, C.T., Newcombe, N.S., Olson, I.R., Perlman, S.B. & Murty, V.P. Children show adult-like hippocampal pattern similarity for familiar but not novel events. *Context and Episodic Memory Symposium*, August 2021.
- Ngo, Z.T., Buchberger, E., Newcombe, N.S., Lindenberger, U. & Werkle-Bergner, M. Memory development in early childhood. In Ngo, C.T. & Newcombe, N.S. (Chairs), Comparative approaches to memory development. *Cognitive Science Society*, Vienna and virtual, July 2021.
- Bennett-Pierre, G., Weinraub, M., Newcombe, N.S. & Gunderson, E. "This is hard!": Children and parents talk about difficulty during a dyadic interaction. *Virtual Society for Research in Child Development*, April 2021.
- Beneat, S.L., Hoffman, L.H., Jobson, K.R., Popal, H., Heffernan, Z., Newcombe, N.S., & Olson, I.R. White matter correlates of explicit memory in young adults. *Cognitive Neuroscience Society*, Virtual, March 2021.
- Brucato, M., Smith, M., Newcombe, N.S. & Chein, J. On the role of attention in spatial, cognitive and affective perspective-taking: An activation likelihood meta-analysis. *Cognitive Neuroscience Society*, Virtual, March 2021.
- Ngo, C.T. & Newcombe, N.S. Relational binding and holistic retrieval in aging. *Context and Episodic Memory Symposium*, Virtual, August 2020.

- Beneat, S., Ngo, C.T., Olson, I.R. & Newcombe, N.S. Why does relational binding improve across early childhood? Testing the effects of interference and sleep-filled delays. *Context and Episodic Memory Symposium*, Virtual, August 2020.
- Ngo, C.T., Beneat, S., Popal, H., Newcombe, N.S. & Olson, I.R. Development of generalization and episodic specificity. *Cognitive Neuroscience Society*, Virtual Meeting, May 2020. In Symposium, C.T. Ngo (Chair), Specifics and generalities: Beyond the semantic-episodic distinction.
- Ngo, C.T., Michelmann, S., Newcombe, N.S. & Olson, I.R. Pattern separation and pattern completion: Related or dissociable processes? *Psychonomic Society*, Montreal, November 2019.
- Tansan, M., Shipley, T.F. & Newcombe, N.S. Individual differences in integrating spatial relationships across successively viewed regions. *Psychonomic Society*, Montreal, November 2019.
- Newcombe, N.S. Semantic before episodic memory in development: Constraints on memory models. In symposium, V. Murty (Chair), Development as a Rosetta Stone between the MTL and memory phenomenology. *Memory Disorders Research Society*, New York City, NY, October 2019.
- Brucato, M., Nazareth, A. & Newcombe, N.S. Longitudinal development of cognitive maps. *Cognitive Development Society*, Louisville KY, October 2019.
- Beneat, S., Ngo, C.T., Newcombe, N.S. & Olson, I.R. The effect of a delay including sleep on episodic memory interference in early childhood. *Cognitive Development Society*, Louisville KY, October 2019.
- Newcombe, N.S. Active movement enhances spatial flexibility. In Integrated and flexible spatial representations: Who makes them (when and how) and why they are important. *European Society for Cognitive Psychology*, Tenerife, Spain, September 2019.
- Brucato, M., Frick, A., Nazareth, A. & Newcombe, N.S. Measuring spatial perspective-taking: Analysis of four measures using item response theory. In Symposium: Individual differences in spatial representations and wayfinding. *Cognitive Science Society*, Montreal, July 2019.
- Nazareth, A., Huang, X., Voyer, D. & Newcombe, N.S. A meta-analysis of sex differences in human navigation skills. In Symposium: Individual differences in spatial representations and wayfinding. *Cognitive Science Society*, Montreal, July 2019.
- Resnick, I., Goldwater, M., Newcombe, N. S. Relation between mathematics achievement, fraction number line estimation, and proportional reasoning: A cross-cultural study. *422nd Annual Meeting of the Mathematics Education Research Group of Australasia*, Perth, Western Australia, July 2019.
- Ngo, C.T., Horner, A.J., Newcombe, N.S. & Olson, I.R. The development of holistic episodic recollection. *Context and Episodic Memory Symposium*, Philadelphia, May 2019.
- Atit, K., Miller, D., Newcombe, N.S. & Uttal, D.H. Teachers' spatial skills across disciplines and education levels: Exploring nationally representative data. *Society for Research in Child Development*, Baltimore, MD, March 2019.
- Miller-Cotto, D., Booth, J., Chang, B., Cromley, J.G., Newcombe, N.S. & Williams, T. A. A comparison of sketching and self-explanation when solving math and science problems. *Society for Research in Child Development*, Baltimore, MD, March 2019.

- Ren, K., Newcombe, N.S. & Gunderson, E. Parent praise during spatial tasks: Mothers, fathers, and longitudinal relations to spatial skills. *Society for Research in Child Development*, Baltimore, MD, March 2019.
- Hildebrand, L., Jirout, J., Newcombe, N.S. & Gunderson, E. The development of gender stereotypes about spatial, math, and reading domains. *Society for Research in Child Development*, Baltimore, MD, March 2019.
- Keresztes, A., Ngo, C. T., Lindenberger, U., Werkle-Bergner, M., Newcombe, N. S. Hippocampal maturation drives memory from generalization to specificity during childhood and adolescence. *Budapest CEU Conference on Cognitive Development*, Budapest, Hungary, January 2019.
- Velazquez, M., Holmes, C.A. & Newcombe, N.S. Going through the motions: Investigating strategies for spatial integration of a small-scale array. *Cognitive Science Society*, Madison WI, July 2018.
- Nazareth, A., Jaeger, A. & Newcombe, N.S. Sketches and verbal descriptions: Indices of knowledge about spatial environments? Prompts to refine knowledge? *Cognitive Science Society*, Madison WI, July 2018.
- Carey, I., Kirvin-Quamme, A., Newcombe, N.S. & Holmes, K. Spatial categories in language and thought: Evidence for categorical perception at the cardinal axes. *Cognitive Science Society*, Madison WI, July 2018.
- Zhao, J., Klippel, A., Minear, M., Newcombe, N., Bodenheimer, B., McNamara, T., Nazareth, A. & Sensibaugh, T. Impacts of viewpoint transition and body--based cues on spatial learning in virtual reality. *2nd Interdisciplinary Navigation Symposium*, Mont Tremblant, Canada, June 2018.
- Holmes, C., Newcombe, N.S. & Shipley, T.F. Sequential memory, spatial integration, and observer movement: A new perspective on spatial memory. *2nd Interdisciplinary Navigation Symposium*, Mont Tremblant, Canada, June 2018.
- Weisberg, S.M., Newcombe, N.S. & Chatterjee, A. Everyday taxi drivers: Do gifted navigators have larger hippocampi? *2nd Interdisciplinary Navigation Symposium*, Mont Tremblant, Canada, June 2018.
- Nazareth, A., Lin, Y. & Newcombe, N.S. Spatial navigation in normal aging. *2nd Interdisciplinary Navigation Symposium*, Mont Tremblant, Canada, June 2018.
- Cromley, J.C., Newcombe, N. & Booth, J. Drawing to learn: Who benefits? *Diagrams 2018*, Edinburgh, Scotland, June 2018.
- Canada, K.L., Ngo, C.T., Newcombe, N.S., Geng, F. & Riggins, T. It's all in the details: Relations between young children's developing pattern separation abilities and hippocampal subfield volumes. *Learning & Memory 2018*, Huntington Beach CA, April 2018.
- Ngo, C.T., Lin, Y., Newcombe N.S. & Olson, I.R. Building up and wearing down episodic memory: Relational memory and pattern separation. *Learning & Memory 2018*, Huntington Beach CA, April 2018.
- Weisberg, S.M., Newcombe, N.S. & Chatterjee, A. Everyday taxi drivers: Do gifted navigators have larger hippocampi? *Cognitive Neuroscience Society*, Boston, MA, March 2018.
- Holmes, C.A., Newcombe, N.S. & Shipley, T.F. Multiple views of space: Movement around a stable array enhances flexible spatial memory. *Psychonomic Society*, Vancouver, Canada, November 2017.

- Ngo, C.T., Lin, Y., Olson, I.R. & Newcombe N.S. Tracking relational memory and pattern separation across the life span. *Psychonomic Society*, Vancouver, Canada, November 2017.
- Twyman, A.D., Holden, M.P. & Newcombe, N.S. First direct evidence of cue integration in reorientation: A new paradigm. *Psychonomic Society*, Vancouver, Canada, November 2017.
- Begolli, K., Booth, J., Homes, C. & Newcombe, N. How many apples make a quarter? The challenge of discrete fraction formats. *Cognitive Development Society*, Portland, OR, October 2017.
- Hildebrand, L., Jirout, J., Newcombe, N. & Gunderson, E. The development of gender stereotypes about spatial skills, reading and general academic ability. *Cognitive Development Society*, Portland, OR, October 2017.
- Twyman, A., Holden, M. & Newcombe, N. A new paradigm showing the first direct evidence of cue integration in reorientation. *Cognitive Development Society*, Portland, OR, October 2017.
- Lin, Y., Nazareth, A., Do, A., Haj, R. & Newcombe, N. The developmental origins of cognitive mapping: Age-related changes in spatial navigation studied in a virtual environment. *Society for Research in Child Development*, Austin TX, April 2017.
- Ngo, C., Alm, K., Metoki, A., Olson, I., Newcombe, N. & Riggins, T. White matter connectivity and memory development in early childhood. *Society for Research in Child Development*, Austin TX, April 2017.
- Lin, Y., Ngo, C.T., Dippolito, M.R., Piszker, J.M., Olson, I.R., & Newcombe, N.S. Tracking the relative development of relational memory and pattern separation. *Eastern Psychological Association*, Boston, MA, March 2017,
- Nazareth, A., Weisberg, S.M., Margulis, K., Do, A., Haj, R. & Newcombe, N.S. Age-related differences in cognitive mapping during spatial navigation. *Psychonomic Society*, Boston, November 2016.
- Holmes, C.A. & Newcombe, N.S. Integrating partial viewpoints of space: Array stability supports flexibility. *Psychonomic Society*, Boston, November 2016.
- Ngo, C.T., Newcombe, N.S. & Olson, I.R. The ontogeny of relational memory and pattern separation: A radical change in performance between 4 and 6. *Psychonomic Society*, Boston, November 2016.
- Nazareth, A. & Newcombe, N. Developmental origins of cognitive mapping. In symposium on Spatial thinking and STEM education. *International Mind Brain Education Society*, Toronto, September 2016.
- Holmes, C. & Newcombe, N. Integrating partial viewpoints of space: Array stability supports flexibility. *International Mind Brain Education Society*, Toronto, September 2016.
- Verdine, B.N., Marzouk, M.A., Brezack, N.G., Tonob, T., Rosen, A.J., Hirsh-Pasek, K., & Golinkoff, R.M. Toying around with spatial learning: How toy design influences parent-child interactions around geometric shapes. *Spatial Cognition 2016*, Philadelphia, PA, August 2016.
- Verdine, B.N., Golinkoff, R.M., Hirsh-Pasek, K., & Newcombe, N.S. Preschool spatial skills: Are they important for mathematics? *Spatial Cognition 2016*, Philadelphia, PA, August 2016.

- Lin, Y., Ngo, C.T., Newcombe, N.S. & Olson, I. R. Remembering things together and apart: The development of memory discrimination and associative memory in young children. *Eastern Psychological Association*, New York, March 2016.
- Holmes, C.A., Marchette, S. & Newcombe, N.S. It's the journey not the destination: Observer action between multiple viewpoints enhances spatial learning. *Psychonomic Society*, Chicago, November 2015.
- Blacker, K., Weisberg, S.M., Newcombe, N.S. & Courtney, S.M. How working memory for spatial locations versus relations predicts navigation ability. *Psychonomic Society*, Chicago, November 2015.
- Weisberg, S.M., Atit, K., Newcombe, N.S. & Shipley, T.F. How to get the point: Spatial language interacts with gesture in learning topographic maps. *Psychonomic Society*, Chicago, November 2015.
- Galati, A., Weisberg, S.M., Newcombe, N.S. & Avraamides, M. Effect of gesturing strategies on navigation performance and spatial memory. *Psychonomic Society*, Chicago, November 2015.
- Ngo, C.T., Weisberg, S.M., Newcombe, N.S., & Olson, I.R. The relation between navigation strategy and associative memory: An individual differences approach. *International Conference of Spatial Cognition*, Rome, Italy, September 2015.
- Holmes, C.A., Marchette, S.A., Newcombe, N.S. Remembering where: Effects of perspective change and object rotation on spatial memory. *International Conference of Spatial Cognition*, Rome, Italy, September 2015.
- Nardi, D., Holmes, C.A., Newcombe, N.S., & Weisberg, S.M. More on the ability to use slope for navigation: Evidence from children. *International Conference of Spatial Cognition*, Rome, Italy, September 2015.
- Weisberg, S.M., & Newcombe, N.S. It's not can but how: Navigation aptitude and strategy. *International Conference of Spatial Cognition* Rome, Italy, September 2015.
- Galati, A., Weisberg, S.M., Newcombe, N.S. & Avraamides, M. Individual differences in spatial ability influence the effect of gesturing on navigation and spatial memory. *Gesture and Speech in Interaction*, Nantes, September 2015.
- Xu, Y., Regier, T. & Newcombe, N. An adaptive cue combination model of spatial reorientation. *Cognitive Science Society*, Pasadena, CA, July 2015.
- Morden-Snipper, D.R., Dai, T., Booth, J.L., Chang, B.L., Cromley, J.G. & Newcombe, N.S. Cognitive factors and representation strategies in sketching math diagrams. *Cognitive Science Society*, Pasadena, CA, July 2015.
- Miller, B. W., Cromley, J. G., & Newcombe, N. S. Why does a diagram-focused intervention help students learn science? *American Educational Research Association*, Chicago, IL, April, 2015.
- Cromley, J. G., Alfieri, L., Massey, C., Merlino, F. J., Newcombe, N. S., & Schunn, C. D. Improving middle-school science instruction with analogical reasoning. Part of a symposium "Relational reasoning in STEM domains: What empirical research can contribute to the national dialogue. *American Educational Research Association*, Chicago, IL, April, 2015.
- Jirout, J., Holmes, C., Newcombe, N., & RamsOOK, K. Scaling up spatial development: A closer look at

- children's scaling ability and number knowledge. *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Morden-Snipper, D., Chang, B., Dai, T., Howe, J., Cromley, J., Booth, J., & Newcombe, N. Drawing helps: Motivational and cognitive correlates of diagram creation and problem solving in math and science. *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Möhring, W., Newcombe, N., & Frick, A. Space and mathematics: Spatial scaling is related to understanding of relational quantities and whole numbers. *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Möhring, W., Ramsook, K., Hirsh-Pasek, K., Golinkoff, R.M., & Newcombe, N. The sound of space and number: Are children's spatial, numerical and musical skills related? *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Frick, W. Möhring, N. Newcombe. Spatial abilities predict later mathematics achievement: A longitudinal study. *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Galati, A., Weisberg, S.M., Newcombe, N.S. & Avraamides, M.N. Self-generated gestures selectively influence navigation performance and spatial memory. *Psychonomic Society*, Long Beach CA, November 2014.
- Weisberg, S.M. & Newcombe, N.S. Remembering what and where: The relationship between components of navigation ability and working memory. *Psychonomic Society*, Long Beach CA, November 2014.
- Ngo, C., Newcombe, N.S., Olson, I. & Weisberg, S.M. The relation between navigation strategy and associative memory. *Psychonomic Society*, Long Beach CA, November 2014.
- Newcombe, N.S., Marchette, S. & Holmes, C. Move to learn: perspective taking and rotation as methods of learning. *Psychonomic Society*, Long Beach CA, November 2014.
- Jirout, J. & Newcombe, N. Building blocks for developing spatial skills: Evidence from a large representative U.S. sample. *International Mind Brain Education Society*, Fort Worth TX, November 2014.
- Frick, A., Bergamo, N., Newcombe, N. & Möhring, W. Mentale Rotation bei 4,5- und 6-Jährigen: Ein Vergleich von prospektiven und retrospektiven Aufgaben und die Rolle des visuell-räumlichen Arbeitsgedächtnisses. *German Psychological Society*, Bochum, September 2014.
- Weisberg, S.M. & Newcombe, N.S. Remembering what and where: The relationship between components of navigation ability and working memory. *Spatial Cognition 2014*, Bremen, Germany, September 2014.
- Möhring, W., Newcombe, N. S., Levine, S. C., & Frick, A. A matter of proportions: Spatial scaling is related to proportional reasoning in 4- and 5-year-olds. *Spatial Cognition 2014*, Bremen, Germany, September 2014.
- Holmes, C.A., Marchette, S. & Newcombe, N.S. Move to learn: Perspective taking and rotation as method for learning spatial layout. *Spatial Cognition 2014*, Bremen, Germany, September 2014.
- Miller, B. W., Hart, J. R., Cromley, J. G., & Newcombe, N. S. Instruction increases diagrammatic reasoning through behavioral engagement. *American Educational Research*

- Association*, Philadelphia, PA, April 2014.
- Miller, B. W., Cromley, J. G., & Newcombe, N. S. The critical role of knowledge gain in improving diagram comprehension. *American Educational Research Association*, Philadelphia, PA, April 2014.
- Miller, B. W., Cromley, J. G., & Newcombe, N. S., Chang, M., & Forbus, K. Using CogSketch to support student science learning through sketching with automatic feedback. *American Educational Research Association*, Philadelphia, PA, April 2014.
- Weisberg, S.M., Newcombe, N.S. & Shipley, T.F. What predicts understanding of topographic maps? *Psychonomic Society*, Toronto, November 2013.
- Jirout, J. & Newcombe, N.S. Mapping the role of representations in spatial game play. *Cognitive Development Society*, Memphis TN, October 2013.
- Möhring, W., Newcombe, N. S., Levine, S. C., & Frick, A. A sense of proportion: Spatial proportional reasoning is associated with formal knowledge about fractions. *European Congress on Developmental Psychology*, Lausanne, Switzerland, September 2013.
- Cromley, J. G., Bergey, B. W., Kirchgessner, M., Wills, T.W., & Newcombe, N. Combining conventions of diagrams instruction and repeated practice in biology classes. *American Educational Research Association*, San Francisco, April 2013.
- Cromley, J. G., Newcombe, N., & Wills, T. W. Cognitive science-based instruction in middle school science: Effects on comprehension of visual representations. *American Educational Research Association*, San Francisco, April 2013.
- Miller, B. W., Cromley, J. G., & Newcombe, N. Improving middle school science students' diagram reasoning through instruction. *American Educational Research Association*, San Francisco, April 2013.
- Newcombe, N.S., Balcomb, F., Ferrara, K.J., Hansen, M. & Koski, J. The emergence of episodic memory between 18 months and five years. Part of a symposium "The emergence and development of episodic memory: Journeys through time and space". *Society of Research in Child Development*, Seattle, WA, April 2013.
- Frick, A., Möhring, W., & Newcombe, N. Picturing perspectives: The development of perspective-taking abilities in 4- to 8-year-olds. *Society of Research in Child Development*, Seattle, WA, April 2013.
- Möhring, W., Newcombe, N., & Frick, A. Mental transformation for spatial scaling in 4- and 5-year-olds. *Society of Research in Child Development*, Seattle, WA, April 2013.
- Jirout, J. & Newcombe, N. Mazes and maps: Can young children find their way? *Society of Research in Child Development*, Seattle, WA, April 2013.
- Harris, J., George, N., Newcombe, N., & Hirsh-Pasek, K.. The mystery of misconceptions: Exploring how understanding of multiple components of motion develops. *Society of Research in Child Development*, Seattle, WA, April 2013.
- Holmes, C.A., Weisberg, S.M., Newcombe, N.S., & Nardi, D. Hitting the slopes: The strength of gradient cues in child navigation. *Society of Research in Child Development*, Seattle, WA, April 2013.

- Holden, M.P., Newcombe, N.S. & Shipley, T.F. Expertise effects in defining spatial categories. *Psychonomic Society*, Minneapolis, MN, November 2012.
- Weisberg, S.M., Nardi, D., Newcombe, N.S. & Shipley, T.F. Sensing the slopes: Sensory modality effects in using slope. *Psychonomic Society*, Minneapolis, MN, November 2012.
- Möhring, W., Newcombe, N.S. & Frick, A.. Zooming in on spatial scaling processes: Mental transformations or proportional judgments? *Psychonomic Society*, Minneapolis, MN, November 2012.
- Weisberg, S.M., Brakoniecki, E., & Newcombe, N.S. The other side of the mountain: Slope as a cue in navigation. *5th International Conference on Spatial Cognition*. Rome, Sept. 2012.
- Weisberg, S.M., Epstein, R.A., Newcombe, N.S., Schinazi, V.R., & Shipley, T.F. Where do you think you are: A virtual environment assessment of navigation ability. *Spatial Cognition 2012*. Kloster Seeon, Bavaria, Germany, August 2012.
- Frick, A. & Newcombe, N.S. The space between the lines: Young children's understanding of 2D diagrams of 3D objects. *Spatial Cognition 2012*, Kloster Seeon, Bavaria, Germany, August 2012.
- Weisberg, S.M., Brakoniecki, E., & Newcombe, N.S. The other side of the mountain: Slope as a cue in navigation. *Cognitive Science Society*, Sapporo, Japan, July 2012.
- Resnick, I., Shipley, T., Newcombe, N., Massey, C. & Wills, T. Examining the representation and understanding of large magnitudes using the hierarchical alignment model of analogical reasoning. *Cognitive Science Society*, Sapporo, Japan, July 2012.
- Koski, J., Newcombe, N. & Olson, I. Assessing relational memory across the first 6 years: What does eye tracking tell us? In symposium on Relational Memory in Infancy: What Kind and How Strong? Chair: N. Newcombe. *International Conference on Infant Studies*, Minneapolis, June 2012.
- Weisberg, S.M., Epstein, R., Newcombe, N., Schinazi, V. R., & Shipley, T. Developing a virtual environment assessment of navigation ability. *American Psychological Society*, Chicago, May 2012.
- Cromley, J. G., Bergey, B. W., Fitzhugh, S. L., Wills, T. W., & Newcombe, N.. Effectiveness of student-constructed diagrams and self-explanation instruction. *American Educational Research Association*, Vancouver, CA, April, 2012.
- Cromley, J. G., Wills, T. W., Bergey, B. W., Fitzhugh, S. L., & Newcombe, N.. Do spatial abilities matter for teaching diagram comprehension? A test of the ability-as-compensator hypothesis. *American Educational Research Association*, Vancouver, CA, April, 2012.
- Cromley, J. G., Newcombe, N.S. & Wills, T. W.. Five tests of the ability-as-compensator hypothesis in diagram comprehension instruction. Part of a symposium "Cognitive processes in comprehension of visual representations: Art, diagrams, graphs, and models", *American Educational Research Association*, Vancouver, CA, April, 2012.
- Newcombe, N.S. Cognitive science learning principles in action: Visualization. *NSTA National Conference on Science Education*, Indianapolis, March 2012.
- Frick, A. & Newcombe, N.S. Development of mental rotation in 3- to 5-year-olds. *Cognitive Development Society*, Philadelphia, PA, October 2011.

- Resnick, I., Shipley, T.F., Newcombe, N., Massey, C., & Wills, T. Progressive alignment of geologic time. *Geological Society of America*, Minneapolis, MN, October 2011.
- Nardi, D., Newcombe, N.S. & Shipley, T.F. Individual differences in reorientation. *American Psychological Society*, Washington, DC, May 2011.
- Cromley, J., Newcombe, N., Wills, T. W., Wills, M., Karakus, M., & Batchelor, M. (2011). Teaching middle school students to reason with visual representations in science. Part of symposium "The effects of curricular modifications based on principles of cognitive science for middle school science curricula". *American Educational Research Association*, New Orleans, LA, April 8-12, 2011.
- Terranova, J., Halberstadt, C., Hou, L., McManaman, M., Athanasopoulou, A., Stahl, A., Wong, W., Chang, A., Golinkoff, R., Hirsh-Pasek, K., Newcombe, N.S. (2011). Girls and boys square off: Gender differences in children's recognition of shapes. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Fisher, K., Hirsh-Pasek, K., Newcombe, N.S., Golinkoff, R. (2011). Untangling playful-learning: Exploring the impact of dialogic inquiry and exploration in play-based pedagogies. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Balcomb, F., Newcombe, N.S., Ferrara, K. (2011). Two rooms, two representations? Emergent episodic-like memory in early childhood. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Frick, A., Newcombe, N.S. (2011). Spatial scaling abilities in 3- to 6- year-olds. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Funk, A., Twyman, A., Newcombe, N.S. (2011). Three-year-old children's successful use of a "middle" search strategy. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Fisher, K., Hirsh-Pasek, K., Newcombe, N.S., Golinkoff, R. (2011). When playful learning trumps direct instruction: The case of shape learning. *Society for Research in Child Development*, Montreal, QC, March 2011.
- Holden, M.P., Newcombe, N.S. & Shipley, T.F. Recognition memory and the category adjustment model: A forced-choice location memory study. *Psychonomic Society*, St. Louis, MO, November 2010.
- Schinazi, V. R., Dara-Abrams, D., Epstein, R., Nardi, D., Newcombe, N. & Shipley, T. From the real to the virtual world: Individual differences in navigation. *Spatial Cognition 2010*, Mount Hood, Oregon, August 2010.
- Cromley, J. G., Wills, T. W., Resnick, I., Dai, T., Perez, A. C., Fitzhugh, S., Newcombe, N., & Ramos-Castillo, N. (2010). Reading comprehension--sequences of cognitive moves while reading scientific text. *Society for the Scientific Study of Reading*, Berlin, Germany, July 7-10.
- Perez, A. C., Cromley, J. G., & Newcombe, N. Relationships between visuospatial skills, knowledge, and reasoning with science diagrams. *American Educational Research Association*, Denver, CO, April 30-May 4, 2010.
- Fitzhugh, J.G., Cromley, J. G., Newcombe, N., Perez, A. C., & Wills, T. W. High school students comprehension of text and diagrams: Testing a model with eye tracking data. *American Educational Research Association*, Denver, CO, April 30-May 4, 2010.

- Schunn, C., Merlino, J., Cromley, J. G., Massey, C., Newcombe, N., & Nokes, T.. Translational science of cognitive science in middle school science curricula. Part of a symposium entitled Implementing best practice methodology given school realities: Approaches from a middle school science intervention evaluation. *American Educational Research Association*, Denver, CO, April 30-May 4, 2010.
- Sutton, J., Joanisse, M. & Newcombe, N.S. Neural correlates of virtual reorientation. *Cognitive Neuroscience Society*, Montreal, Canada, April 2010.
- Balcomb, F., Newcombe, N.S., Ferrara, K., & Funk, A.Y. Changes in context-bound memory may provide the foundations for episodic memory. *International Conference on Infant Studies*, Baltimore, MD, March 2010.
- Wong, W., Dewson, G., Monahan, M., Shi, T. Stahl, A., Golinkoff, R., Newcombe, N.S., & Hirsh-Pasek, K. The square goes here! Language and action scaffolding during shape play with traditional and electronic shape sorting toys. *International Conference on Infant Studies*, Baltimore, MD, March 2010.
- Wong, W., McManaman, M.T., Stahl, A., Golinkoff, R.M., Newcombe, N.S., & Hirsh-Pasek, K. Triangles as pizza slices, circles in clocks: Representational complexity in children's recognition of shapes. *International Conference on Infant Studies*, Baltimore, MD, March 2010.
- Fitzhugh, S.L., Goksun, T., Goldin-Meadow, S., Newcombe, N.S., & Shipley, T.F. Insights into mental transformations: Combining gesture, speech, and eye movements to understand mental rotation. *Psychonomic Society*, Boston, MA, November 2009.
- Holden, M.P., Newcombe, N.S., & Shipley, T.F. Extending the boundaries of category adjustment: Perceptually and conceptually defined categories. *Psychonomic Society*, Boston, MA, November 2009.
- Schinazi, V.R., Epstein, R.A., Nardi, D., Newcombe, N.S., & Shipley, T.F. The acquisition of spatial knowledge in an unfamiliar campus environment. *Psychonomic Society*, Boston, MA, November 2009.
- Balcomb, F., Newcombe, N.S., Ferrara, K., Grant, J., & Hittinger, S.M. Early arbitrary object memory in toddlers may set the stage for episodic memory. *Cognitive Development Society*, San Antonio, TX, October 2009.
- Fisher, K., Ferrara, K., Hirsh-Pasek, K., Newcombe, N.S. & Golinkoff, R. Transforming preschoolers' geometric shape knowledge: Exploring verbalizations & behaviors during a categorization task. *Cognitive Development Society*, San Antonio, TX, October 2009.
- Frick, A., & Newcombe, N.S. Measuring mental rotation in 4-year-olds using a nonverbal touch screen paradigm. *Cognitive Development Society*, San Antonio, TX, October 2009.
- Twyman, A., Newcombe, N.S., & Gould, T. J. Sex effects, age effects, and malleability in spatial navigation. *Cognitive Development Society*, San Antonio, TX, October 2009.
- Twyman, A., Newcombe, N.S., & Gould, T. J. Tale of two cities: Rearing environment influences spatial reorientation. In S.E. MacDonald (Chair), "Foraging and the Evolution of Cognition". *American Psychological Association*. Toronto, Canada, August 2009.

- Balcomb, F., Newcombe, N.S., & Ferrara, K. Convergence and divergence in representational systems: Place learning and language in toddlers. *Cognitive Science Society*, Amsterdam, The Netherlands, July 2009.
- Newcombe, N.S. The Academy's peer review of the National Children's Study research design. In W.R. Beardslee and R. Chalk (Chairs), "Recent Studies on Mental Health, Depression, and Assessment of Young Children from the National Academy of Sciences. Paper symposium conducted at the biennial meeting of the *Society for Research in Child Development*, Denver, CO, April 2009.
- Newcombe, N.S. What works to improve spatial skill? Mechanisms of change. In N.M. Else-Quest (Chair), "Gender and STEM Careers: Developing Math, Spatial, and Science Performance." Paper symposium conducted at the biennial meeting *Society for Research in Child Development*, Denver, CO, April 2009.
- Fisher, K., Nash, B.A., Hirsh-Pasek, K.A., Newcombe, N.S. Breaking the mold: Altering preschooler's concepts of geometric shapes. *Society for Research in Child Development*, Denver, CO, April 2009.
- Roseberry, S., Goksun, T., Hirsh-Pasek, K.A., Newcombe, N.S., Golinkoff, R.M., Novack, M., Brayfield, R. Individual differences in early event perception predict later verb learning. *Society for Research in Child Development*, Denver, CO, April 2009.
- Wan, X.I., Newcombe, N.S., Shipley, T.F., & Fitzhugh, S. Sex differences in direction giving: Easy to fix? In D. Uttal (Chair), "How Malleable Is Spatial Skill? What We Can Change and What We Can't." Paper symposium conducted at *Society for Research in Child Development*, Denver, CO, April 2009.
- Fitzhugh, S., Morrison, A., Chein, J., Shipley, T.F. & Newcombe, N.S. Training mental rotation: A comparison of spatial and working memory training. *Eastern Psychological Association*, Pittsburgh, PA, March 2009.
- Morrison, A., Chein, J., Fitzhugh, S., Newcombe, N., Olson, I. & Shipley, T. Training and transfer effects using a complex span working memory task. *Psychonomic Society*, Chicago, November 2008.
- Holden, M., Newcombe, N.S. & Shipley, T.F. Spatial memory: Hierarchical coding of location in natural, inverted and color-negative images of scenes. *Psychonomic Society*, Chicago, November 2008.
- Fitzhugh, S., Morrison, A., Chein, J., Shipley, T.F. & Newcombe, N.S. Training mental rotation: A comparison of spatial and working memory training. *Psychonomic Society*, Chicago, November 2008.
- Twyman, A., Newcombe, N.S. & Shallcross, W.L. Spinning in circles: Feature based reorientation. *Comparative Cognition Society Fall Meeting*, Chicago, November 2008.
- Newcombe, N.S. Overview of the APA/SRCD Math and Science Education Task Force Report. *American Psychological Association*, Boston, August 2008.
- Ganis, G., Thompson, W.L., Newcombe, N.S., Wright, R. & Kosslyn, S.M. (2008). Training generalized spatial skills. *Conference on Research and Training in Spatial Intelligence*, Evanston, IL, June 2008.
- Fitzhugh, S., Morrison, A., Shipley, T.F., Chein, J. & Newcombe, N. The effects of working memory

- training versus spatial visualization training on spatial intelligence. *Conference on Research and Training in Spatial Intelligence*, Evanston, IL, June 2008.
- Fitzhugh, S.L., Shipley, T.F., Newcombe, N., McKenna, K. & Dumay, D. Mental rotation of real-world Shepard-Metzler figures: An eye tracking study. *Conference on Research and Training in Spatial Intelligence*, Evanston, IL, June 2008.
- Liu, L., Uttal, D. & Newcombe, N. A meta-analysis of training effects on spatial skills: What works, for whom, why and for how long? *Conference on Research and Training in Spatial Intelligence*, Evanston, IL, June 2008.
- Fitzhugh, S.L., Shipley, T.F., Newcombe, N., Dumay, D. & McKenna, K. Mental rotation of real world Shepard-Metzler figures: An eye-tracking study. *Vision Sciences Society*, Naples, FL, May 2008.
- Shallcross, W.L. , Göksun, T. , Golinkoff, R. , Hirsh-Pasek, K. , Lloyd, M.E. , Newcombe, N.S. & Roseberry, S. Building talk: Parental utterances during construction play. *International Conference on Infant Studies*, Vancouver, CA, March 2008.
- Twyman, A., Newcombe, N.S. & Gould, T.J. Reorientation in the absence of geometric information: Evidence against a geometric module. *Comparative Cognition Society*, Melbourne Beach, FL, March 2008.
- Crawley, S.L., Newcombe, N.S. & Bingman, H. Children's encoding focus and later source monitoring decisions. *Psychonomic Society*, Long Beach, CA, November 2007.
- Ratliff, K.R. & Newcombe, N.S. Reorienting when cues conflict: Using geometry and features following landmark displacement. *Psychonomic Society*, Long Beach, CA, November 2007.
- Shipley, T.F., Holden, M.P., Latecki, L.J., Newcombe, N.S. & Fitzhugh, S.L. Spatial memory: Categorical and metric encoding of location in complex scenes. *Psychonomic Society*, Long Beach, CA, November 2007.
- Ratliff, K.R. & Newcombe, N.S. A matter of trust: When landmarks and geometry are used during reorientation. *Cognitive Science Society*. Nashville, TN, August 2007.
- Crawley, S.L., Newcombe, N.S., Lloyd, M., Sluzenski, J., Doydum, A., & Sywulak, L. Changes in preschoolers' memory for features and feature combinations. In S. Li (Chair), "Development of memory binding mechanisms across the lifespan." Symposium conducted at the meeting of the *American Psychological Society*, Washington, DC. May 2007.
- Holden, M.P., Shipley, T.F. & Newcombe, N.S. Context influence on memory for location in natural scenes. Poster presented at the 7th annual meeting of the Vision Sciences Society, Florida, May 2007.
- Newcombe, N.S., Jones, M.C. & Shallcross, W. How are geometric and featural information used to reorient in a complex space? Part of symposium, "Spatial representation in young children: How is geometric and non-geometric location information processed?" *Society for Research in Child Development*, Boston, March 2007.
- Marulis, L. M., Liu, L. L., Warren, C. M., Uttal, D. H., & Newcombe, N. S. Effects of training or experience on spatial cognition in children and adults: A meta-analysis. Poster presented at the biennial meeting of the *Society for Research in Child Development*, Boston, March 2007.

- Newcombe, N.S. & Ratliff, K.R. Combining geometric and featural information in reorientation. *Psychonomic Society*, Houston, November 2006.
- Kovacs, S., Sluzenski, J., Lloyd, M. E. & Newcombe, N.S. Changes in feature and binding memory across childhood. *Psychonomic Society*, Houston, November 2006.
- Newcombe, N.S. Are men better visualizers? *Geological Society of America*, Philadelphia, October 2006.
- Newcombe, N.S. An adaptive combination approach to spatial representation: Using geometric and featural spatial information. *Cognitive Science Society*, Vancouver, Canada, July 2006.
- Terlecki, M.S. & Newcombe, N.S. The effects of long-term practice and training on mental rotation. *Psychonomic Society*, Toronto, ON, November 2005.
- Learmonth, A., Newcombe, N., Hansell, N. & Jones, M. Action and reorientation ability: The role of restricted movement at 3 and 5 years. Part of symposium, The diversity of children's spatial representations. *Cognitive Development Society*, San Diego, October 2005.
- Marulis, L., Warren, C., Uttal, D. & Newcombe, N. A meta analysis: The effects of training on spatial cognition in children. *Cognitive Development Society*, San Diego, October 2005.
- Ratliff, K.R. & Newcombe, N.S. Human spatial reorientation using dual task paradigms. *Cognitive Science Society*, Stresa, Italy, July 2005.
- Newcombe, N.S., Sluzenski, J. & Kovacs, S. The development of source-monitoring in children. Part of symposium, Approaches to understanding source monitoring. *Midwestern Psychological Association*, Chicago, IL, May 2005.
- Newcombe, N.S. & Sluzenski, J. Neural substrates of the development of episodic memory. Part of symposium, A neurobehavioral perspective on the development of autobiographical memory. *Society for Research in Child Development*, Atlanta, GA, April 2005.
- Kovacs, S.L., Hansell, N., & Newcombe, N.S. Preschoolers' feature memory and binding processes. *Society for Research in Child Development*, Atlanta, GA, April, 2005.
- Newcombe, N.S. (Organizer and Chair). A cross-species perspective on integration of spatial information for navigation. *American Association for the Advancement of Science*, Washington, DC, Feb. 2005.
- Roblyer, K.R. & Newcombe, N.S. Human spatial reorientation: Evidence from dual-task paradigms. *Psychonomic Society*, Minneapolis, November 2004.
- Newcombe, N.S. & Learmonth, A.E. The development of place learning in comparative perspective. Part of symposium, Spatial perception, spatial cognition: Mapping the self and the environment. *American Psychological Association*, Honolulu, August 2004.
- Newcombe, N.S. Introduction and overview to symposium: Using science to inform preschool assessment. *National Institute for Early Childhood Professional Development, Learning from Assessment*, Baltimore, Maryland, June 20-23, 2004
- Sluzenski, J. & Newcombe, N.S. Do infants just follow their noses in coding spatial location? Discrimination of locations not directly in front of the body. *International Conference on Infant Studies*, Chicago, IL, May 2004.

- Chiang, N. C.-R. & Newcombe, N.S. Learning geographical information from hypothetical maps. *Psychonomic Society*, Vancouver, November 2003.
- Yantorno, R., Terlecki, M., Newcombe, N., Weisberg, R., & Liu, C. T. (2003). From school to work: Impedance mismatch? Proceedings of the Fall 2003 *American Society for Engineering Education Middle Atlantic Section Conference*, ASEE, Baltimore, MD.
- Newcombe, N.S., Sluzenski, J. & Kovacs, S.L. A source-monitoring framework for studying the development of episodic memory. Part of symposium, "A window to the past: The nature and timing of long-term memory development". *Society for Research in Child Development*, Tampa, April 2003.
- Sluzenski, E.J. & Newcombe, N.S. Development of binding in children's memory. *Psychonomic Society*, Kansas City, November 2002.
- Newcombe, N.S. What do you say after you say interactionism? Spatial development in the first two years. *Jean Piaget Society*, Philadelphia, PA, June 2002.
- Kovacs, S.L., Maguire, M.J. & Newcombe, N.S. Young infants' ability to use "what" information when the salience of "where" information is reduced. *International Conference on Infant Studies*, Toronto, ON, April 2002.
- Kovacs, S.L., Newcombe, N.S. & Johnson, M.K. The effect of emotional focus on children's recognition and source memory. *Cognitive Development Society*, Virginia Beach, VA, October 2001.
- Sluzenski, J., Newcombe, N.S. & Huttenlocher, J. Infants' knowledge of normal and anomalous spatial events. *Cognitive Development Society*, Virginia Beach, VA, October 2001.
- Satlow, E., Sluzenski, J. & Newcombe, N.S. The origins of functional spatial memory in the second year. Part of symposium, "Spatial cognitive development: A map to the child's mind". *Cognitive Development Society*, Virginia Beach, VA, October 2001.
- Satlow, E. & Newcombe, N.S. The origins of functional spatial memory: A foundational characteristics approach. *International Conference on Memory-3*, Valencia, Spain, July 2001.
- Himmelfarb, D., Drummey, A.B., Fox, N.A. & Newcombe, N.S. A developmental study of event-related potentials during a recognition memory task. *Cognitive Neuroscience Society*, New York, March 2001.
- Newcombe, N. S. Building from starting points in spatial development. Part of symposium organized by N. S. Newcombe and K. Hirsh-Pasek, "Standing at the radical middle: Interactionism in infant development in the linguistic, spatial and quantitative domains", *International Conference on Infant Studies*, Brighton, England, July 2000.
- Newcombe, N. S. Questioning the egocentric-to-allothetic shift hypothesis of infant spatial development. Part of symposium, "Do they know where they're going: The development of spatial processing in infancy", *International Conference on Infant Studies*, Brighton, England, July 2000
- Newcombe, N. S. The relation of childhood amnesia to prefrontal cortex development. Presented at conference organized by N. Newcombe, M. Farah & N. Fox, *The relations of prefrontal cortex development to children's cognitive and social behavior*, May 5-8, 2000.

- Ottinger-Alberts, W. & Newcombe, N.S. Retrieval effort, source monitoring and childhood amnesia: A new look at an old problem. Part of symposium, "Converging perspectives on the nature of early memory development", *Society for Research in Child Development*, Albuquerque, April 1999.
- Drumme, A.B., Fox, N. & Newcombe, N.S. An event-related potential study of source memory using the Deese procedure. *Cognitive Neuroscience Society*, Washington, April 1999.
- Learmonth, A.E., Newcombe, N.S. & Huttenlocher, J. Disoriented children use landmarks as well as geometry to reorient. *Psychonomic Society*, Dallas, TX, November 1998.
- Drumme, A.B. & Newcombe, N. Can prefrontal cortex development explain changes in episodic memory? *Cognitive Neuroscience Society*, San Francisco, April 1998.
- Newcombe, N.S., Huttenlocher, J. & Learmonth, A. Spatial memory in five-month-olds is more than categorical. *International Conference on Infant Studies*, Atlanta, April 1998.
- Newcombe, N.S. Defining a "radical middle" in the study of cognitive development. Part of symposium, "Domains of change or continuity: Why is infancy so important?" *International Conference on Infant Studies*, Atlanta, April 1998.
- Ottinger-Alberts, W. & Newcombe, N.S. Perceptual facilitation in children at chance levels of forced-choice recognition. *Psychonomic Society*, Philadelphia, November 1997.
- Newcombe, N., Learmonth, A. & Wiley, J.G. Infants' coding of location in continuous space. Part of symposium organized by N. Newcombe, Objects and Space in Infancy, *Society for Research in Child Development*, Washington, DC, April 1997.
- Huttenlocher, J., Newcombe, N. & Sandberg, E.H. Early map use. Part of symposium organized by N. Newcombe, Development of Spatial Symbolization, *Society for Research in Child Development*, Washington, DC, April 1997.
- Newcombe, N., Huttenlocher, J., Sandberg, E. & Lie, E. What do asymmetries in judgment indicate about representation? The case of spatial estimation. *Psychonomic Society*, Chicago, November 1996.
- Newcombe, N., Lie, E. & Drumme, A.B. Rethinking infantile amnesia. Part of symposium organized by N. Newcombe, Varieties of Children's Mnemonic Experience, *International Conference on Memory-2*, Padua, Italy, July 1996.
- Newcombe, N., Huttenlocher, J., Learmonth, A. & Wiley, J. Spatial memory in 5-month-old infants. *International Conference on Infant Studies*, Providence, April 1996.
- Newcombe, N., Huttenlocher, J., Drumme, A.B. & Wiley, J. Use of external frames of reference and dead reckoning in toddlers' coding of spatial location. *International Conference on Infant Studies*, Providence, April 1996.
- Lie, E. & Newcombe, N. Childhood amnesia: Memory for faces of preschool classmates. *Psychonomic Society*, Los Angeles, November 1995.
- Newcombe, N. & Bullock, A. Remembering versus knowing the past: Children's explicit and implicit memory for pictures. *Society for Research in Child Development*, Indianapolis, April 1995.
- Newcombe, N., Huttenlocher, J. & Sandberg, E. Development of hierarchical spatial coding. *Society for Research in Child Development*, Indianapolis, April 1995.

- Lie, E. & Newcombe, N. Double dissociation between implicit and explicit memory of faces observed in adults and children. *American Psychological Society*, Washington, D.C., July 1994.
- Bullock, A. & Newcombe, N. Memory at three years: Robust facilitation of perceptual identification, failure of recognition. *Psychonomic Society*, Washington, D.C., November 1993.
- Newcombe, N. & Sanderson, H. L. The relation between preschoolers' everyday activities and spatial ability. Part of symposium, "Sex differences in spatial ability: New data on biocultural interactions", organized and chaired by N. Newcombe, *Society for Research in Child Development*, New Orleans, March 1993.
- Lie, E. & Newcombe, N. Young children's ability to recognize familiar and unfamiliar faces. *American Psychological Association*, Washington, D.C., August 1992.
- Newcombe, N. Children's early ability to solve perspective-taking problems. Part of symposium, "The nature of spatial location coding: Developmental and cross-species studies", organized and chaired by N. Newcombe, *Society for Research in Child Development*, Seattle, April 1991.
- Newcombe, N. Two-year-olds' coding of spatial location. *Psychonomic Society*, New Orleans, November 1990.
- Dubas, J.S. & Newcombe, N. The role of gender-stereotyped spatial activities in predicting young adolescents' spatial ability. *Society for Research on Adolescence*, Atlanta, March 1990.
- Newcombe, N. & Huttenlocher, J. Children's early ability to solve perspective-taking problems. *Psychonomic Society*, Atlanta, November 1989.
- Fox, N., Newcombe, N., Prime, A. & Smith, J. 11-12-year-olds' memory for former preschool classmates. *American Psychological Society*, Alexandria, VA, June, 1989.
- Newcombe, N. Perspective taking and spatial representation: The role of environmental coding. Part of symposium, "Contextual influences on spatial understanding". *Jean Piaget Society*, Philadelphia, PA, June, 1989.
- Dubas, J. S. & Newcombe, N. Information processing analysis of two spatial visualization tasks: Are there common mental processes? *Society for Research in Child Development*, Kansas City, April 1989.
- Weinmann, L. & Newcombe, N. Identity status and perceived course of relationship with parents. *Society for Research on Adolescence*, Alexandria, VA, March 1988.
- Newcombe, N. & Baenninger, M. A. Timing of puberty and spatial ability: Current status of the hypothesis. Part of symposium, "Individual differences in cognitive abilities during adolescence: An integration of environmental and physiological variables." *Society for Research on Adolescence*, Alexandria, VA, March 1988.
- Newcombe, N. A longitudinal study of predictors of spatial ability in adolescent females. *Society for Research in Child Development*, Baltimore, April 1987.
- Baenninger, M. A., Dubas, J. S. & Newcombe, N. Biological and experiential factors in sex-related differences in spatial ability. Part of symposium organized by N. Newcombe, "Sex-related

- differences in spatial ability: Recent meta-analyses and future directions." *Society for Research in Child Development*, Baltimore, April 1987.
- Newcombe, N. What do spatial transformation tasks tell us about spatial coding? Part of symposium, "Different frames of reference in children's spatial representation." *American Psychological Association*, Washington, DC, August 1986.
- Wasik, B. & Newcombe, N. Explaining the value of mnemonic strategies: Effects on LD and NLD children. *Southeastern Conference on Human Development*, Nashville, TN, April 1986.
- Spies, C., Newcombe, N., & Huttenlocher, J. Developmental changes in children's ability to solve spatial transformation problems. *Southeastern Conference on Human Development*, Nashville, TN, April 1986.
- Newcombe, N. & Dubas, J.S. Cognitive consequences of timing of puberty: A meta-analysis. *International Society for the Study of Behavioral Development*, Tours, France, July 1985.
- Newcombe, N., Dubas, J.S., & Spies, C. Two-year-olds' coding of spatial location. *Society for Research on Child Development*, Toronto, April 1985.
- Newcombe, N., Dubas, J.S., & Moore, M.A. Associations of timing of puberty with spatial ability, lateralization and personality: Do they persist in adulthood? Part of symposium, "Pubertal change and spatial ability reconsidered." *Society for Research in Child Development*, Toronto, April 1985.
- Dubas, J.S. & Newcombe, N. The choice of non-traditional careers for women: Preference or ability? *Association of Women in Psychology*, New York, March 1985.
- Ward, S.L., Newcombe, N., & Overton, W.F. Turn left at the church, or three miles north: A study of direction giving and sex differences. *Eastern Psychological Association*, Boston, March 1985.
- Newcombe, N., Huttenlocher, J., & Dundon, W. Landmarks and memory for large-scale space: A closer look at developmental change. *Southeastern Conference on Human Development*, Athens, GA, April 1984.
- Newcombe, N. Gender issues in the study of development. Part of symposium, "Gender, power, and values: The intellectual legacy of Carolyn Wood Sherif." *American Psychological Association*, Anaheim, California, August 1983.
- Newcombe, N. & Lerner, J.C. The varieties of historical experience: Methodology in assessing the life and work of John Bowlby. *Society for Research in Child Development*, Detroit, April 1983.
- Newcombe, N. & Bandura, M.M. Pubertal timing and personality in adolescent girls. *Southeastern Conference on Human Development*, Baltimore, April 1982.
- Liben, L.S. & Newcombe, N. Barrier effects and processing demands. *Psychonomic Society*, Philadelphia, November 1981.
- Newcombe, N., Wallett, D., & Zaslow, M. Code-switching in the use of directives by three- and five-year-old children. *International Society for the Study of Behavioral Development*, Toronto, Aug. 1981.
- Newcombe, N. & Bandura, M.M. Effects of age at puberty on spatial ability in girls: A question of mechanism. *Society for Research in Child Development*, Boston, April 1981.

- Newcombe, N., Bandura, M.M., & Taylor, D.G. Spatial ability and spatial activities in adolescence. *American Psychological Association*, Montreal, September 1980.
- Newcombe, N., Wallett, D., & Zaslow, M. "Let's Play": Children's directives in play with mothers and strangers. *Association for the Anthropological Study of Play*, Ann Arbor, Michigan, April 1980.
- Liben, L.S. & Newcombe, N. Barrier effects on the cognitive maps of children and adults. *Southeastern Conference on Human Development*, Alexandria, Virginia, April 1980.
- Newcombe, N. & Zaslow, M. Hints and question directives in the speech of 2 1/2-year-old children to adults. Part of symposium, Development of Directives: From Infancy to First Grade, organized by N. Newcombe. *Southeastern Conference on Human Development*, Alexandria, Virginia, April 1980.
- Branch, C. & Newcombe, N. Racial attitudes in preschoolers as related to level of parental civil rights activism. *Eastern Psychological Association*, Philadelphia, Pennsylvania, April 1979.
- Lerner, J.C. & Newcombe, N. Britain between the wars: The historical context of Bowlby's theory of attachment. *Society for Research in Child Development*, San Francisco, California, March 1979.
- Newcombe, N. & MacKenzie, D.L. Development of encoding and decision processes in visual recognition. *American Psychological Association*, Toronto, Ontario, August 1978.
- Newcombe, N. & Arnkoff, D.B. Speech styles and sex stereotypes. *Association of Women in Psychology*, Pittsburgh, Pennsylvania, March 1978.
- Newcombe, N. & Huttenlocher, J. Semantic effects on immediate ordered recall by young children. *Society for Research in Child Development*, Denver, Colorado, April 1975.

Professional Service Talks

- Newcombe, N.S. Organizer and Chair, Psychological science: Lessons for the law. *American Association for the Advancement of Science*, Seattle, WA, February 2020.
- Newcombe, N.S. Co-chair, Symposium: Associations between space and number across development. *Society for Research in Child Development*, Baltimore, MD, March 2019.
- Newcombe, N.S. Panelist, Memory assessments across development: Current practices and aspirations for the future. *Society for Research in Child Development*, Baltimore, MD, March 2019.
- Newcombe, N.S. The editors' corner: Conducting and publishing integrative science. *International Convention of Psychological Science*, Paris, France, March 2019.
- Newcombe, N.S. Organizer, How people learn II. *American Association for the Advancement of Science*, Washington, DC, February 2019.
- Newcombe, N.S. Participant in panel on social media. *Women in Cognitive Science*, Vancouver, BC, November 2017.
- Newcombe, N.S. Organizer and moderator, Psychonomic Society-sponsored symposium on "Embodied cognition and STEM learning". *European Society for Cognitive Psychology*, Potsdam, Germany,

September 2017.

Newcombe, N.S. Participant in conversation round table on “Catalyzing a paradigm shift: Research translation for advancing science and society”. *Society for Research in Child Development*, Austin TX, April 2017.

Newcombe, N.S. Introduction for Dr. Martha Farah, *Society for Research in Child Development*, Philadelphia, PA, March 2015.

Newcombe, N.S. & Hawes, Z. (Chairs), Symposium on “The relationship between spatial thinking and mathematics in early childhood”, *Society for Research in Child Development*, Philadelphia, PA, March 2015.

Newcombe, N.S. Introduction for Dr. Laurence Steinberg, *Cognitive Development Society*, Philadelphia, PA, October 2011.

Newcombe, N.S. Introduction for Dr. Marcia Johnson’s address in connection with the Distinguished Scientific Contribution Award, *American Psychological Association*, Washington DC, August 2011.

Newcombe, N.S. Participant in panel on Academic Careers in Psychology, *Eastern Psychological Association*, Cambridge, MA, March 2011.

Newcombe, N.S. Participant in “Writing effective graduate school letters of recommendation”. *Eastern Psychological Association*, Pittsburgh, PA, March 2009.

Newcombe, N.S. Introduction for Dr. Janellen Huttenlocher’s address in connection with the Distinguished Scientific Contribution Award, *American Psychological Association*, Boston, August 2008.

Newcombe, N.S. Five burning questions of the professoriate. *Cognitive Development Society*, Santa Fe, NM, October 2007.

Newcombe, N.S. & Hagen, J.W. Conversation hour on Presidential Task Force on Math and Science Education, *American Psychological Association*, San Francisco, CA, August 2007.

Newcombe, N.S. How to get published: Advice from journal editors. *Association for Psychological Science*, Washington DC, May 2007.

Newcombe, N.S. Presenter at APA Career Workshop, *Society for Research in Child Development*, Boston, March 2007.

Newcombe, N.S. Moderator for Establishing Professional Connections and Collaborations: A Panel Discussion. Women in Cognitive Science, *Psychonomic Society*, Houston, November 2006.

Newcombe, N.S. Introduction for Dr. Ann Masten’s Division 7 Presidential Address, *American Psychological Association*, New Orleans, August 2006.

Newcombe, N.S. Introduction for Dr. Douglas Medin’s address in connection with the Distinguished Scientific Contribution Award, *American Psychological Association*, Washington, DC, August 2005.

Newcombe, N.S. Introduction for Dr. Nathan Fox’s Division 7 Presidential Address, *American Psychological Association*, Honolulu, August 2004.

Newcombe, N.S. Co- Chair for Roundtable Breakfast Discussion, Reconsidering Domain Specificity and Domain Generality in Infant Cognition. *International Conference on Infant Studies*, Chicago, IL, May 2004.

Newcombe, N.S. Introduction for Dr. Richard J. Davidson, *Cognitive Development Society*, Park City, Utah, October 2003.

Newcombe, N.S. How to negotiate. Paper in Academic Career Workshop for new Ph.D.s. *Society for Research in Child Development*, Tampa, FLA, April 2003.

Newcombe, N.S. Participant in Town Meeting on the United Nations Convention on the Rights of the Child. *American Psychological Association*, Chicago, August 2002.

Newcombe, N.S. Participant in Conversation Hour on IRBs and research with children—Protecting children and promoting research. *American Psychological Association*, Chicago, August 2002.

Newcombe, N.S. Introduction for Dr. Janellen Huttenlocher's G. Stanley Hall Award Lecture, *American Psychological Association*, Chicago, August 2002.

Newcombe, N.S. Introduction for Dr. Amanda Woodward's McCandless Award Lecture, *American Psychological Association*, San Francisco, August 2001.

Newcombe, N.S. How to publish: The editor's perspective. *American Psychological Association*, San Francisco, August 2001

Newcombe, N.S. How to negotiate. Paper in Academic Career Workshop for new Ph.D.s. *Society for Research in Child Development*, Minneapolis, MN, April 2001.

Newcombe, N.S. Introduction for Dr. Judy DeLoache's Division 7 Presidential Address, *American Psychological Association*, Washington, DC, August 2000.

Newcombe, N.S. Introduction for Dr. Judy DeLoache's Master Lecture on Cognitive Development, *Society for Research in Child Development*, Albuquerque, April 1999

Newcombe, N.S. How to publish: The editor's perspective. *American Psychological Association*, Chicago, August 1997.

Newcombe, N.S. An editor's perspective on electronic publishing. Part of symposium, Where is Electronic Publishing Taking APA? *American Psychological Association*, Chicago, August 1997.

Newcombe, N. How to get your articles published. *Southeastern Psychological Association*, Norfolk, March 1996.

Discussant Comments

Newcombe, N.S. Discussant for symposium "Improving children's spatial thinking in educational settings". *International Mind Brain and Education Society*, Leuven, Belgium, July 2024.

Newcombe, N.S. Discussant for symposium "Learning from prediction (error)". *International Mind Brain and Education Society*, Leuven, Belgium, July 2024.

- Newcombe, N.S. Discussant for symposium “Grounding the mind in the body: The neural substrates of embodied learning”. *International Mind Brain and Education Society*, Leuven, Belgium, July 2024.
- Newcombe, N.S. Chair and discussant for symposium “Comparative approaches to memory development”. *Cognitive Science Society*, Virtual, July 2020.
- Newcombe, N.S. Chair and discussant for symposium “Getting our bearings: Advances in understanding spatial reorientation”. *Cognitive Science Society*, Virtual, July 2020.
- Newcombe, N.S. Discussant for symposium “When man bites dog: What do developmental reversals tell us about cognitive development, aging, and the brain. *Psychonomic Society*, Vancouver, Canada, November 2017.
- Newcombe, N.S. Discussant for symposium “Recall memory in children with Down Syndrome and typically developing controls: Longitudinal relations and moderating influences *Society for Research in Child Development*, Austin TX, April 2017.
- Newcombe, N.S. Discussant for symposium “A new approach to memory development”. *Society for Research in Child Development*, Philadelphia, PA, March 2015.
- Newcombe, N.S. Discussant for symposium “Memory for objects in spatial context: Developmental change examined with ERP, MRI and in atypical development”. *Society for Research in Child Development*, Seattle, WA, April 2013.
- Newcombe, N.S. Discussant and Co-Organizer for symposium “Educating spatial skills at varied ages with varied approaches: Are STEM outcomes affected? *Society for Research in Child Development*, Seattle, WA, April 2013.
- Newcombe, N.S. Discussant for symposium “Where are we now? Understanding spatial skills, strategies, and navigation”. *American Psychological Society*, Washington, DC, May 2011.
- Newcombe, N.S. Discussant for symposium “When representational systems collide: Aligning space and language”. *International Society on Infant Studies*, Baltimore, MD, March 2010.
- Newcombe, N.S. Discussant for symposium “Visualizations in the mind and in the world: Implications for STEM education”, *American Association for the Advancement of Science*, San Diego, CA, February 2010.
- Newcombe, N.S. Looking in from the outside: The view from space and the view from language. Discussant comments for Conference on *The INS and OUTS of Spatial Language*. Chicago, June 2008.
- Newcombe, N.S. Discussant for symposium, “‘What goes in must come out’: Developmental differences in encoding and the effects on source monitoring.” *Society for Research in Child Development*, Boston, March 2007.
- Newcombe, N.S. Discussant for the symposium “Perspectives on space: Development, representation and spatial dysfunction in William’s syndrome. *Eastern Psychological Association*, Baltimore, MD, March 2006.
- Newcombe, N.S. Discussant for symposium, “Early gender differences in spatial skills: How to intervene to improve spatially-based mathematical thinking. *Society for Research in Child Development*, Atlanta, GA, April 2005.

- Newcombe, N.S. Discussant for symposium, "Early development of relational coding: Abilities and limitations. *Society for Research in Child Development*, Atlanta, GA, April 2005.
- Newcombe, N.S. Discussant for Presidential symposium, New perspectives on language acquisition, *Cognitive Development Society*, Park City, Utah, October 2003.
- Newcombe, N.S. Discussant for symposium, "Spatial cognition and the rest of cognition: Relations between spatial and nonspatial thinking." *Society for Research in Child Development*, Tampa, April 2003.
- Newcombe, N.S. Discussant for symposium, "Infant working memory: Development, measurement, and functionality." *Society for Research in Child Development*, Minneapolis, MN, April 2001.
- Newcombe, N. S. Discussant for symposium, "Expectancy, perseveration, and permanence: What information do we get from looking and reaching tasks?" *International Conference on Infant Studies*, Brighton, England, July 2000.
- Newcombe, N. Discussant for John Bruer's talk, *The myth of the first three years: Implications for child development and public policy*, Temple University, March 13, 2000.
- Newcombe, N. Discussant for Spatial Coding session, Symposium Co-Organized by N. Newcombe, J. Huttenlocher and B. Landau, *Fostering Spatial Competence: Behavioral, Symbolic and Brain Aspects*, Chicago, Oct 17-19, 1999.
- Newcombe, N.S. Discussant for symposium, "The representation of continuous quantity in infants and children", *Society for Research in Child Development*, Albuquerque, April 1999.
- Newcombe, N. Discussant for invited symposium on early memory, organized by P. Bauer, *American Psychological Society*, New York, July 1995.
- Newcombe, N. Discussant for paper session: Young children's thinking. *Jean Piaget Society*, Philadelphia, PA, June 1990
- Newcombe, N. Discussant for symposium: Do gender differences in horizontality result primarily from cognitive or perceptual factors? *Eastern Psychological Association*, Philadelphia, PA, April 1990.
- Newcombe, N. Discussant for paper session: Spatial relations. *Jean Piaget Society*, Philadelphia, PA, June, 1989.
- Newcombe, N. Discussant for paper session: Young children's cognition. *Jean Piaget Society*, June 1988.
- Newcombe, N. Discussant for paper session: Spatial representation. *Jean Piaget Society*, Philadelphia, May 1987.
- Newcombe, N. Discussant for paper session: Spatial representational processes. *Jean Piaget Society*, Philadelphia, May 1986.
- Newcombe, N. Discussant for M.C. Linn & A.C. Petersen, Emergence and characterization for gender differences in spatial ability: A meta-analysis. *American Educational Research Association*, Montreal, April 1983.

Newcombe, N. Discussant for symposium: Cognitive mapping. *American Psychological Association*, Washington, DC, August 1982.

Newcombe, N. Discussant for symposium: Current perspectives in large-scale spatial cognition. *Society for Research in Child Development*, Boston, April 1981.

Newcombe, N. Discussant for symposium: Sex differences in cognition: Exploring alternative explanations. *American Psychological Association*, Montreal, September 1980.

Professional Service

Current Editorial Positions:

Consulting Editor, Proceedings of the National Academy of Sciences

Editorial Board, *Spatial Cognition and Computation*, 2008- , *Developmental Science*, 2014- , *Mind, Brain & Education*, 2017- , *Journal of Navigation*, 2021- , *Current Biology* 2022-

Current Professional Society Positions:

Secretary-Treasurer, Society of Experimental Psychologists, 2024-27.

Other Professional Service (Current):

Member, Human Complex Mental Function (HCMF) study section, NIH, 2024-27.

Member, ECR HUB Advisory Committee, 2023-

Member, Klaus J. Jacobs LEVANTE Project Advisory Board, 2023-

Member, Klaus J. Jacobs Research Prize Jury, 2023-27.

Member, Committee on Science and the Arts, The Franklin Institute, 2013-

Past Editorial Positions:

Editor, *Psychological Science in the Public Interest*, 2019-2025.

Editor, *Journal of Experimental Psychology: General*, 1996-2001.

Associate Editor, *Cognitive Research: Principles and Implications* (Founding Editorial Board), 2015-2021.

Associate Editor, *Cognitive Psychology*, 2007-19.

Associate Editor, *Psychological Bulletin*, 1990-94

Associate Editor, *Perspectives on Psychological Science*, 2005-09.

Associate Editor, *WIREs in Cognitive Science*, 2008-2016.

Associate Editor, *Cognitive Processing*, 2012-2016.

Guest Co-Editor, Special Issue on Social Cognition: From Babies to Robots. *Neural Networks*, 2010.

Guest Co-Editor, Special Issue on Spatial Frameworks, *Journal of Experimental Psychology: Learning, Memory and Cognition*, 2008-09.

Invited Co-Editor, Special Issue on Interactions among Scientists and Policy Makers: Challenges and Opportunities, *American Psychologist*, March 2002.

Guest Editor, Special Issues on Early Memory, *Journal of Experimental Child Psychology*, 1993-94.

Consulting Editor, *Developmental Psychology*, 1981-87, *Child Development*, 1982-1996, 2007-13, *Journal of Experimental Child Psychology*, 1983-2005, *Psychological Bulletin*, 2002-04, *Psychological Science*, 2004-10, *Cognition*, 2015-19, *Canadian Psychology*, 2017-19.

Past Grant Reviewing:

NSF Review Panel for International Science and Engineering, Spring 2023

NSF Review Panel for Graduate Education, Spring 2023

NIH Biobehavioral Processes Review Branch Special Emphasis Panel, Spring 2023

NIH HCMF Study Section, Fall 2021, Spring 2022
 NIH Fellowship Study Section, 2020.
 NSF NCS Panel, 2019.
 NSF STC Pre-Proposals, Reviewer, February 2015.
 NSF SBE MPRF Panel, Reviewer, January 2012.
 NIH Program Project Grant, Reviewer, April 2011, May 2012.
 NSF, Research and Evaluation on Education in Science and Engineering, February 2010.
 NSF, Developmental and Learning Sciences Advisory Panel, 2003-06.
 NSF, Developmental and Learning Sciences Advisory Panel, November 2001.
 NSF, Learning and Intelligent Systems Initiative, 1998.
 NIH, Perception and Cognition Review Group, 1993.
 NSF, Human Cognition and Performance Advisory Panel, 1989-93.
 NIMH, Mental Health Small Grant Review Panel, 1987-89, Chair 1988-89.
 NIH, Adolescent Family Life Review Group, 1985

Past APA Activity:

Co-Chair, Div 7 Mentor Award Committee
 American Psychological Association, Needs Assessment Slating and Campaigns Committee, 2020-22.
 APA Task Force on Advocacy, 2018
 Board of Scientific Affairs, Member 2009-11, Chair 2011
 Member-at-Large, Division 3 Executive Committee, 2007-10.
 Editor Search Committee, *Journal of Experimental Psychology: General*, 2010
 Host at Mentoring Breakfast, APA Meeting, Boston, August 2008.
 Delegate, Grand Challenges Summit, October 2007.
 Chair, APA Task Force on Math and Science Education, 2007.
 Delegate, Education Leadership Conference, 2007.
 Delegate, Science Leadership Conference, 2005, 2006, 2007, 2010, 2011
 Candidate for APA President, 2006.
 APA Board of Scientific Affairs Representative to the Federation of Behavioral, Psychological, and Cognitive Sciences, 2006-8.
 Delegate, APA Membership Summit, 2006
 Editor Search Committee, *Journal of Experimental Psychology: General*, 2006
 APA Board of Scientific Affairs Representative to AAAS Section J, 2005-8.
 Committee on Scientific Awards, 2004-2006, Chair 2006
 Koppitz Fund Committee, American Psychological Foundation, 2003-7.
 APA Testimony to Congress on the NSF Budget, April 2002.
 President-Elect, Division 7, 2000-2001; President, 2001-2002; Past President, 2002-2003.
 Executive Committee, Division 1 (General), 1999-2000.
 Publications and Communications Board Liaison, 1998-2000
 Chair-Elect (1998-99), Chair (1999-2000), Council of Editors
 Division 7 Representative to Council, 1998-2000.
 Chair, Division 7 Early Career Award Committee, 1995.
 Member, Division 7 Credentials Committee, 1994-96.
 Chair, Division 7 Dissertation Award Committee, 1993.
 Member-at-Large, Division 7 Executive Committee, 1991-93.
 Track Chair, Science Weekend, 1989; Program Chair, Division 7, 1989.

Past Professional Society Positions:

Member, CSS DEI Committee, 2022-24
 International Mind, Brain, Education Society, President-Elect 2017-18, President 2019-22, Past President 2022-24.
 Society for Research in Child Development, Publications Committee, 2019-22.

Cognitive Science Society, Elman Prize Committee, Chair, 2019-21.
 Federation of Associations in Behavioral & Brain Sciences, President-Elect, 2016-17, President 2018-19, Past President 2020-21.
 Section on Psychology (J), American Association for the Advancement of Science, Chair-Elect 2016-17, Chair 2017-18, Past Chair 2018-19.
 Governing Board, Cognitive Science Society, 2013-18, Chair-Elect 2014-15, Chair 2015-16, Past Chair 2016-17.
 Board of the International Mind, Brain, Education Society, 2009-16
 American Academy of Arts and Sciences' Class III, Section 1
 (Social and Developmental Psychology) Membership Panel, 2012-14
 President-Elect 2007-9, President 2010-11, Past President 2012-13, Cognitive Development Society
 Program Chair, 2011, International Mind, Brain, Education Society.
 President-Elect 2007-8, President 2008-9, Past President 2009-10, Eastern Psychological Association
 Secretary, Section on Psychology (J), American Association for the Advancement of Science, 2002-2010.
Perspectives Editor Search Committee, APS, 2009
 Lifelong Learning at Work and at Home Taskforce, APS, 2006-09
 Psychonomic Society representative to AAAS Section J, 2005-09.
 Women in Cognitive Science Board, 2004-08.
 Board of the Cognitive Development Society, 2003-9; Program Chair, 2005.
 Governing Board, Psychonomic Society, 2002-8
PB&R Editor Search Committee 2005.
 Host, Lunch with the Leaders, SRCD, Albuquerque, NM, April 1999.
 Program Committee, Society for Research in Child Development, 1993-99, Co-Chair, 1995-97.

Past NSF-Related Activity:

Member, Committee of Visitors, SBE Directorate, 2019.
 Invited Participant, Design-Based Implementation Workshop, San Francisco, June 2011.
 Research Methodology Expert Panel, NORC, April 25, 2011.
 Invited Participant, UCSB Spatial Literacy Workshop, February 2011.
 Invited Participant, NSF Neuroscience Workshop, Arlington, VA, Dec. 2007
 Invited Participant, Transfer of Learning Workshop, March 2002.
 Invited Participant, Applying the Science of Learning, Claremont, CA, Feb. 2001.
 Co-Organizer of Conference on Fostering Spatial Competence: Behavioral, Symbolic and Brain Aspects, Chicago, Oct 17-19, 1999. NSF Sponsored.
 Co-Chair, Blue Ribbon Panel on Transition of Children to the Workforce, 1999-2000.
 Advisory Committee on Children and Learning, 1998.
 Workshop on Contributions of the Social Sciences to the NSF Review of Undergraduate Education, 1996.
 Co-Chair, Conference on Cognitive Science Bases of Math and Science Education, 1995.

Other Service (Past):

Advisory Board for RO1, Florida International University, 2019-2023.
 Consultant for NSF grant to David Uttal, Northwestern University, 2021- 2025.
 Consultant for ONR grant to Mary Hegarty, UC-Santa Barbara, 2021- 2025.
 Advisory Board for NSF grant to Sara Schmitt, Purdue University, 2020- 2024.
 Advisory Board for JHU Science of Learning Institute IES Grant, 2017-21.
 Advisory Board for P01 project "Development and Neurobiology of Categorization", 2016-2021.
 William James Award Selection Committee, Association for Psychological Science, 2016-19.
 American Academy of Arts and Science, Task Force on the *Public Face of Science*, 2016-19.

Advisory Board for GSS, 2014-2018.
 Advisory Board, VISUAL Project, UC-Berkeley, 2010-2015
 Nominating Committee, AAAS Section on Psychology, 2012-2014
 Advisory Board, National Living Laboratory, 2011-13
 Advisory Panel, Wechsler Preschool and Primary Scale of Intelligence–Fourth Edition (WPPSI–IV), 2010-12
 Coordinator, Science of Learning Center PI Committee, 2010 and 2011.
 External Review Board, University of Minnesota Interdisciplinary Training Program in Cognitive Science, 2006-11.
 Co-Program Chair, Spatial Cognition 10, Mount Hood, Oregon.
 Co-Program Chair, Spatial Cognition 08, Freiburg, Germany.
 Advisory Board, Hegarty-Stieff Chemistry Education Grant, 2008-10
 National Academy Panel to Review the National Children’s Study Research Plan, 2007-8.
 Congressional visits on behalf of the Coalition for National Science Funding, Hill Day, September 13, 2006.
 Presentation, Women in Science Congressional Briefing Lunch, May 24, 2005.
 Presentation to 10th Annual Coalition for National Science Funding, Science@Work, Capitol Hill, June 22, 2004.
 Presentations to the Mathematical Sciences Education Board, National Academy of Sciences, Nov. 5, 2003 and March 22, 2004.
 Advisory Board, Cornell Institute for Research on Children (CIRC), 2003-5.
 Co-Organizer, Working Conference on Using Scientific Knowledge of Development to Inform Preschool Assessment, Temple University Center City, Jan. 30-31, 2003.
 Co-Organizer, Conference on the Relations of Prefrontal Cortex Development to Children's Cognitive and Social Behavior, Chestnut Hill, PA, May 5-8, 2000. Sponsored by Temple University and APA.
 Presenter and Discussion Leader on Cognitive Development, Research Opportunities in Child and Adolescent Development, Forum on Research Management, Dec 16-17, 1999.
 Presentation to 4th Annual Coalition for National Science Funding, Capitol Hill, June, 1998.
 External Examiner, Swarthmore College, 1992.
 External Examiner, Doctoral Dissertation, University of Toronto, 1987.
 External Evaluator, Psychology Dept., University of Massachusetts-Boston, 1986.

Memberships:

American Association for the Advancement of Science, Association for Psychological Science, Cognitive Development Society, Cognitive Science Society, International Mind Brain Education Society, Psychonomic Society

Teaching

Undergraduate: introduction to psychology, developmental psychology, research methods, cognitive development, memory, infancy, adolescence, cognitive bases of education

Graduate: developmental psychology, cognitive psychology, cognitive development, developmental theory, memory and memory development, spatial cognition and development, developmental cognitive neuroscience.