NORA S. NEWCOMBE

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U**Education**U

Ph.D. 1976, Harvard University, Cambridge, Massachusetts.

B.A. 1972, Antioch College, Yellow Springs, Ohio.

U**Employment**U

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.

U**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.

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**UHonorsU**

2023 Anderson Lecture, UC-San Diego

2023 Mentor Award, Division 7 (Developmental), American Psychological Association

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**

2021-23 NICHD: Diversity Supplement to Kim Nguyen

2021-26 NEI: Spatial and Nonspatial Knowledge, Co-I. PI: Russell Epstein, University of

Pennsylvania.

2020-21 National Science Foundation, SBE: International Mind, Brain and Education Society

(IMBES): 2020 Biennial Conference Support, PI

2020-21 National Science Foundation, EHR: International Mind, Brain and Education Society

(IMBES): 2020 Biennial Conference Support, PI

2020-25 NICHD: Mapping the Development of Episodic Memory, PI

2020-24 National Science Foundation: Collaborative Research: Paving the Way for Fractions:

Identifying Foundational Concepts in First Grade, PI

2019-21 NICHD: Between Encoding and Retrieval: Behavioral and Neural Indices of Reactivation

in Children’s Memory Development, Co-I; PI: Ingrid Olson

2018-23 National Science Foundation: Developing STEM Achievement and Motivation: The Role

of Spatial Skills and Parent-Child Interactions, Co-I; PI Elizabeth Gunderson

2018-20 National Science Foundation: Supplement to Exploring Links between STEM Success

and Spatial Skills from Integrative Strategies for Understanding Neural and Cognitive

Systems, PI

2017-20 National Science Foundation: Exploring Links between STEM Success and Spatial Skills,

PI

2016 National Science Foundation: International Mind, Brain and Education Society (IMBES):

2016 Biennial Conference Support, PI

2015-18 National Science Foundation: MRI: Acquisition of a 3-Tesla Magnetic Resonance

Imaging (MRI) Scanner, Co-PI; PI Jason Chein

2015-18 Dept. of Education: Network for Cognitive and Educational Science Postdoctoral Training

Grant, PI

2014-15 National Science Foundation: REU Site Grant: Spatial Intelligence and Learning, PI

2013-16 National Science Foundation: REESE/REAL: Sketching and Self-Explanation for Diagram

Comprehension in Math and Science, Co-PI; PI Jennifer Cromley

2012-16 National Science Foundation: SAVI (SILC Supplement), Thematic Network in Spatial

Cognition, PI

2011-16 National Science Foundation: Spatial Intelligence and Learning Center (SILC), PI

2008-13 Dept. of Education, 21st Century Center for Cognition and Science Instruction, Co-PI; PI Joseph Merlino

2008-11 National Science Foundation: Teaching Effective Use of Diagrammatic Reasoning in Biology, Co-PI; PI Jennifer Cromley

2006-11 National Science Foundation: Spatial Intelligence and Learning Center (SILC), PI

2004-07 National Science Foundation, Research on Learning and Education (ROLE):

Understanding and Teaching Spatial Competence, Co-PI; PI Janellen Huttenlocher

2004-07 National Science Foundation: Differing Interpretations of Young Children’s Geometric

Skills, PI

2000-03 National Science Foundation, Research on Learning and Education (ROLE):

Understanding and Teaching Spatial Competence, Co-PI; PI Janellen Huttenlocher

1999-2002 National Science Foundation: The Development of Spatial Coding, PI

1999-2000 American Psychological Association: Scientific Workshop Grant, PI

1999-2000 National Science Foundation: Blue Ribbon Panel Report on Transitions of Children to the Workforce, PI

1999-2000 James McKeen Cattell Fellowship

1997-2000 National Science Foundation, Learning and Intelligent Systems Initiative (LIS): Understanding and Fostering Spatial Competence, Co-PI; PI Janellen Huttenlocher

1996-99 National Science Foundation: The Development of Spatial Coding, PI

1994-99 National Science Foundation: Center for Excellence in Teacher Preparation, Advisory Committee, Senior Personnel; PI Nina Hillman

1994-95 National Science Foundation: Conference on the Cognitive Science Bases of Mathematics and Science Education, PI

1993-96 National Science Foundation: The Development of Spatial Coding, PI

1988-92 National Institute of Child Health and Human Development: The Development of Spatial Coding, PI

1984-87 National Institute of Mental Health: Timing of Puberty and Spatial Ability, PI

1979-80 National Institute of Mental Health: Determinants of Sex Differences in Spatial Ability, PI

1973-76 Canada Council Doctoral Fellowship

* 1. Harvard University Fellowship

**Publications**

# 0B

# **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**

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. & Wolfl, 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.

# 1B

# **Chapters in Edited Books**

Tansan, M., Nguyen, K.V. & Newcombe, N.S. (2022). Spatial navigation in childhood and aging.

*Annual Review of Developmental Psychology, 4.*

Newcombe, N.S., Benear, S., Ngo, C.T. & Olson, I.R. (2022). Memory in infancy and childhood.

In M. Kahana & A. Wagner (Eds.), *Oxford handbook on human memory.*

Newcombe, N.S. (2022). Constructing a canon for the science of learning. In Overson, C.E., Hakala,

C.M., Kordonowy, L.L. & Benassi, V.A. (Eds.), *In their own words: What scholars want you to*

*know about why and how to apply the science of learning in your academic setting.* APA Division 2 e-book.

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* e*merging 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. H<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**

Nguyen, K. V., Tansan, M., & Newcombe, N. S. (2023). Studying the development of navigation using

virtual environments. *Journal of Cognition and Development, 24*:1, 1-

16, DOI: [10.1080/15248372.2022.2133123](https://doi.org/10.1080/15248372.2022.2133123)

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. <https://doi.org/10.1111/tops.12597>

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. <https://doi.org/10.1111/tops.12626>

Resnick, I.R., Goldwater, M. & Newcombe, N.S. (in press). Cross-national differences in the relation

between reasoning about fraction and decimal magnitudes, reasoning proportionally, and

mathematics achievement. *Journal of Numerical Cognition*.

Brunec, I. K. Nantais, M.M., Sutton, J.E., Epstein, R.A., Newcombe,N.S. (in press). Exploration patterns

shape cognitive map learning. *Cognition*.

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*.

Horwath, E.A., Benear, S.L., 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*. <https://doi.org/10.1016/j.brainres.2022.147991>

Tian, J., Ren, K., Weinraub, M., Newcombe, N.S., Vandell, D. & Gunderson, E.A. (2022). Tracing the

origins of the STEM gender gap: The contribution of childhood spatial skills. *Developmental*

*Science*.

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.*

Weisberg, S.M., Schinazi, V.R., Ferrario, A., & Newcombe, N.S. (2022). Evaluating the effects of a

programming error on a virtual environment measure of spatial navigation behavior. *Journal of*

*Experimental Psychology: Learning, Memory, and Cognition*.

Brucato, M., Nazareth, A. & Newcombe, N.S. (2022). Longitudinal development of cognitive mapping

from childhood to adolescence. *Journal of Experimental Child Psychology*.

Brucato, M., Frick, A., Nazareth, A., Pichelmann, S. & Newcombe, N.S. (2022). Measuring spatial

perspective taking: Analysis of four measures using item response theory. *Topics in Cognitive*

*Science*. <https://doi.org/10.1111/tops.12597>

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., Benear, 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.

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# 2B

# **Proceedings**

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# 3B

# **Book Reviews**

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# 4B

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

Gagnier, K.M. & Newcombe, N.S. UNESCO blog.

Ishikawa, T. & Newcombe, N.S. (2021). Why spatial is special in education, learning, and everyday

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Newcombe, N.S. (2019). Linking spatial and mathematical thinking: The search for mechanism.

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*reasoning in mathematical thought* (pp. 355-360). Springer.

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America Special Papers.

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robots. (Introduction to special issue). *Neural Networks.* 939*.*

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thinking. *American Educator,* 29-35, 43.

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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.

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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.

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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. 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 Brach, 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 fur 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.

## 6BNewcombe, N.S. How minds develop: Cutting the nativist knot. G. Stanley Hall Award Talk, *American*

## 7B *Psychological Association*, San Francisco, August 2007.

## 8BNewcombe, N.S. Modularity vs. adaptive combination: Approaches to the development of mind in cultural

## 9B and neural context. Presentation to *Workshop on Culture, Mind, Brain and Development*,

## 10B 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 Varenius 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**

2022-- University of Chicago, Cornell University, Eotvos Lorand University (Hungary), Norwegian Center for Mathematics Education (NTNU)

2021 – Queen Mary University London, Tufts University, University College London, UC-Santa Barbara

2020 – Max Planck Institute-Berlin

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**

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 Annual meeting*, 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 Annual meeting, 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 Annual Meeting*, 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 Annual Meeting*, 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 Conference*, 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 Conference*, 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 Conference*,

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 Conference*, 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.

Benear, 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.

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. 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.

Benear, 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.

Benear, 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., Benear, 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.

Benear, 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*

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Newcombe, N. S. Questioning the egocentric-to-allocentric 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.

Drummey, 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.

Drummey, 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. & Drummey, 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., Drummey, 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 inpanel 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. 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**

U**Current Editorial Positions**U**:**

**Editor,** *Psychological Science in the Public Interest*, 2019-2023.

**Editorial Board,** *Policy Insights from Behavioral and Brain Sciences,* 2014-

*Psychonomic Bulletin and Review*, 2005- , *Spatial Cognition and Computation*, 2008- , *Developmental Science*, 2014- , *Mind, Brain & Education*, 2017- , *Journal of Navigation*, 2021-

**Reviewer** for many other journals, e.g., *Current Biology, Journal of Cognition and Development, Journal of Experimental Psychology: Learning, Memory, and Cognition, Psychological Bulletin*, *Psychological Review, PNAS.*

U**Current Professional Society Positions:**U

American Psychological Association, Needs Assessment Slating and Campaigns Committee,

2020-22.

International Mind, Brain, Education Society, President-Elect 2017-18, President 2019-22, Past

President 2022-24.

U**Other Professional Service (Current)**U:

Consultant for NSF grant to David Uttal, Northwestern University, 2021-

Consultant for ONR grant to Mary Hegarty, UC-Santa Barbara, 2021-

Advisory Board for NSF grant to Sara Schmitt, Purdue University, 2020- .

Advisory Board for U. of Canberra

Advisory Board for RO1, Florida International University, 2019-2023.

Advisory Board for JHU Science of Learning Institute IES Grant, 2017-21.

Advisory Board for P01 project “Development and Neurobiology of Categorization”, 2016-2021.

Advisory Board, MIND Research Neuroscience, 2019-

Advisory Board for Databrary, 2015-

Advisory Board for GSS, 2014-

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

U**Past Editorial Positions**U**:**

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

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

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

**Editorial Board,** *Cognition*, 2015-19, *Canadian Psychology*, 2017-19.

**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 onSocial 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

**Past Grant Reviewing:**

Reviewer, NIH, HCVMF Study Section, Fall 2021, Spring 2022

Reviewer, NIH Fellowship Study Section, 2020.

Reviewer, 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.

Research and Evaluation on Education in Science and Engineering

(REESE), NSF, February 2010.

Developmental and Learning Sciences Advisory Panel, NSF, 2003-06.

Developmental and Learning Sciences Advisory Panel, NSF, November 2001.

Learning and Intelligent Systems Initiative, NSF, 1998.

Perception and Cognition Review Group, NIH, 1993.

Human Cognition and Performance Advisory Panel, NSF, 1989-93.

Mental Health Small Grant Review Panel, NIMH, 1987-89, Chair 1988-89.

Adolescent Family Life Review Group, NIH, 1985

**Past APA Activity**:

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:**

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)**:

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, 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, Society for Research in Child Development

**Teaching**

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

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