

CURRICULUM VITAE  
**Nelson Cowan**

Updated 8 March, 2012

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**Address:** Department of Psychological Sciences  
University of Missouri  
210 McAlester Hall  
Columbia, Missouri 65211

**Telephone:** Work, 573-882-4232  
Home, 573-442-5896  
Fax, 573-882-7710

**Electronic Mail:** *CowanN@Missouri.edu*

**Current Position:** Curators' Professor, University of Missouri, Columbia

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**Research Specializations:**

1. *Short-term or working memory*, including sensory and abstract components
2. *Childhood development* of short-term or working memory
3. Relations between *working memory and selective attention* in information processing

**Teaching Specializations:**

Cognition, Memory, Perception, Information Processing, and Cognitive Development

**Biography:** Born March 7, 1951, Washington, D.C. Married, 1 child, 2 stepchildren

**Education:**

Ph.D. 1980, University of Wisconsin, Madison (Psychology)  
M.S. 1977, University of Wisconsin, Madison (Psychology)  
B.S. 1973, University of Michigan, Ann Arbor (Independent Major, Neurosciences)

Doctoral Thesis: Toward an understanding of morphological segmentation in unfamiliar languages. *Dissertation Abstracts International*, 42, 398-B. Advisor: Philip A. Morse.

**Professional Positions:**

*Current Position:* Curators' Professor, University of Missouri, Department of Psychology (distinguished professor status).

2008-11 Director, Brain Imaging Center, Department of Psychological Sciences, MU

2005-07 Director, Cognition & Neuroscience Training Area, Dept. of Psychological Sciences

1995-2000: Middlebush Professor of the Social Sciences, University of Missouri (honorific)

- title to 1 professor every 5 years on the basis of research and teaching accomplishments.)
- 1994- Professor, Department of Psychology, University of Missouri  
2003: Visiting research scientist, Institute for Psychology, Budapest, Hungary  
2000: Benjamin Meaker Visiting Professor, Institute for Advanced Studies, University of Bristol, United Kingdom.
- 1999: Distinguished Visitor, University of Western Australia  
1999: Visiting research scientist, University of Leipzig, Germany  
1994-96: Director, Experimental Training Area, Dept. of Psychology  
1991: Visiting Research Scientist (March through May), Psychology Department, University of Helsinki, Finland (Collaboration with Risto Näätänen)  
1989-94: Associate Professor, Dept. of Psychology, University of Missouri  
1985-89: Assistant Professor, Psychology Department, University of Missouri  
1982-85: Assistant Professor, Psychology Department, University of Massachusetts at Amherst  
1981-82: Postdoctoral Fellow, Psychology Department, New York University  
Sponsor: Martin D.S. Braine

### **Honors and Awards:**

- President's Faculty Award for Sustained Excellence, University of Missouri System, 2011  
Charter Fellow, Midwestern Psychological Association, 2009  
Fellow, Society of Experimental Psychologists, Elected 2007  
Curators' Professor, University of Missouri. Appointment beginning Sept., 2004. (This is the university's highest faculty award)  
Doctor of Philosophy honoris causa (honorary Doctorate), University of Helsinki (Nov. 22, 2002; conferred June 6, 2003)  
Charter Fellow, American Psychological Society, 1998  
Fellow, American Psychological Association, 1999  
Fellow, American Psychological Association, Division 3 (Experimental Psychology), 1998  
Chancellor's Award for Outstanding Faculty Research and Creative Activity in the Behavioral and Social Sciences, University of Missouri (1998)  
Middlebush Professor of the Social Sciences, University of Missouri (1995-)  
(Awarded to 1 professor at MU every 5 years, for research and teaching quality) (above)  
Golden Chalk Award, for graduate teaching and education, University of Missouri (1999)  
Editor's Award (with R. Gillam & J. Marler), American Speech, Language, and Hearing Association, 1999, for Gillam et al. (1998)  
Distinguished visiting professorships, Univ. of Bristol and Univ. of Western Australia (above)  
New Investigator Research Award (1984)  
Phi Kappa Phi Honor Society, University of Wisconsin Chapter  
Sigma Xi, The Scientific Research Society  
Sloan Scholar, University of Michigan, 1969-1973

### **Editorial and Professional Activities:**

- Liaison from the Psychonomic Society to the U.S. National Committee for Psychological Science, 2012  
President, American Psychological Association, Division 3 (Experimental Psychology), August 2008-09  
Elected member of the Governing Board, Psychonomic Society, 2006-2011  
(Duties included Chair, International Committee; Chair, Editor Selection committee,

*Memory & Cognition*; Publications Committee member; Audit Committee member; Program Committee member)

Editor-in-Chief (with co-editor David A. Balota) of book series, *Frontiers in Cognitive Psychology*, Psychology Press

Associate Editor, *European Journal of Cognitive Psychology*, 2005 – 2007

Associate Editor, *Quarterly Journal of Experimental Psychology (A)*, 2001 - 2004

Associate Editor, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 1995-1999

Section Editor (Experimental Psychology), UNESCO, *Encyclopedia of Life-Support Systems*

Elected Member at Large, Executive Committee of Division 3 of the American Psychological Association (2004-2007)

Program Committee, Chair of Cognitive Section, Midwestern Psychological Association, 1998 - 2000

Program Committee, Chair of Cognitive Section, American Psychological Society, 1999 - 2001

Program Committee, Chair of Division 3 (Experimental), American Psychological Association, 2003 Meeting

Scientific Program Committee Member for the Second International Conference on Working Memory (ICWM-2), Kyoto, Japan, 2004.

Editorial Board Member (sometimes called Consulting Editor) for the following journals:

- Psychological Science*, 2011-
- Journal of Experimental Psychology: General*, 2009-11
- Journal of Experimental Child Psychology*, 1999 -
- Cognitive Development*, 2000 -
- Interpreting*, 2000 -
- Psychological Research*, 1998 -
- Psyche* (a web journal), 1998 -
- Journal of Experimental Psychology: Learning, Memory, & Cognition*, 1993 - 1994
- Psychonomic Bulletin & Review*, 1993 – 1994 and 2003 -
- Memory & Cognition*, 2002 –
- Canadian Journal of Experimental Psychology*, 2005 – 2008
- Seminars in Brain and Consciousness*, 2009-
- Journal of Memory and Language*, 2012-

Scientific Advisory Committee Member for NIH center grant, Albert Einstein College of Medicine, "Clinical research center for communicative disorders," 1997 -

Consultant on grants by Daniel C. Javitt, David B. Pisoni, Wei Ji Ma, Priti Shah

Grant reviewing:

- Co-chair, CSR, F12A Special Emphasis Panel for Fellowships in Cognition, Language, and Perception, March, 2011.
- Guest reviewer for NIH (1998, NIDCD, Communication Sciences), NIMH (Cognition, Emotion, & Personality Study Section); ad hoc grant reviewer for NSF, NIMH, The Air Force Office of Scientific Research, and the James S. McDonnell Foundation. NIH BBBP-4 Study Section guest reviewer (February, 2002). NIH Special Emphasis Panel, Scientific Review Group; CSR, Cognition, Language and Perception Fellowship Study Section (Pre- and Postdoctoral Applications, numerous times 2006-present). Have served as a reviewer for British, Australian, and European granting agencies also.

Consultant on the revision of the Wechsler Preschool and Primary Scale of Intelligence, Version IV (WPPSI-IV), Pearson, 2010-2012

Consultant, Defense Language Institute, Foreign Language Center, Monterey, CA, 2011

**Society Memberships:**

Fellow, Society of Experimental Psychologists  
Society for Research in Child Development (SRCD)  
Midwestern Psychological Association (MPA) (Area Representative, 1992-2000)  
American Psychological Society (APS, Charter Fellow)  
American Psychological Association (APA, Fellow)  
Psychonomic Society

**Extramural Grant Awards:**

*Current extramural funding:*

Cowan, N., PI. 2 R01 HD021338-24. Competing continuation, *Working memory, attention, and time: Childhood development and adult function*. NICHD, 4/01/07 - 2/29/12. Direct costs, \$1,062,500; Total costs, \$1,560,455  
(This is the same project that began in 1984 as a New Investigator Research Award.)

ARRA supplement to the above, R01 HD-21338-23S1. 08/01/2010-07/31/2011. Direct, \$83,000; Total project costs, \$122,259.

Cowan, N., Co-PI. 2P60 AA011998-11, *Multi-disciplinary Alcoholism Research Center Grant, Project 8, Alcohol Effects on Executive Cognitive Function: Specifying Component Processes*. National Institute on Alcohol Abuse and Alcoholism (). Total direct costs (Project 8): \$1,190,447; total project costs: \$1,779,718. 6/01/09 – 05/30/14. Bruce Bartholow is PI for Project 8 (Center PI: Andrew Heath, Washington Univ.)

Cowan, N., Co-PI. 1 R01 DC010784-01A1, *Working Memory and Word Learning in Children with Typical Development and Language Impairment*. NIDCD, 1-1-2011 - 12-31-2015. Direct, \$1,993,933; Total project costs, \$2,992,823. PI: Shelley Gray, Arizona State University

Cowan, N., Co-PI. 1 R40MC19926-01-00, *Predictors of effects of propranolol on language & connectivity in autism*. HRSA, 09-01-2010 08-31-2013. Direct, \$ 121,64; Total project costs, \$188,378. PI: David Beversdorf.

Ricker, T.J., PI. 1F31MH094050-01. NIMH Predoctoral Fellowship (NRSA). *Behavioral and Electrophysiological Measures of Forgetting in Working Memory*. Faculty supervisor. 7/1/2011-6/30/2013

*Prior extramural funding:*

**Prior R01 Awards**

Cowan, N., P.I. NIH R01 Award, NICHD, 2 R01 HD21338-15A1. Competing continuation, *The development of short-term memory for speech attributes..* 7/1/01 - 6/30/06.

Cowan, N., P.I., NIH R01 Award (NICHD, R01 HD21338, Competing continuation, *The development of short-term memory for speech attributes.*). 8/1/96-7/31/2000.

Cowan, N., P.I., NIH R01 Award (Competing continuation, NICHD, HD21338, *The*

*development of memory for speech.*): 7/6/92-7/31/96.  
Cowan, N., P.I., NIH R01 Award, 4/1/88-3/31/92, NICHD, HD21338, *The development of memory for speech.*  
Cowan, N., P.I., NIH New Investigator Research Award, 6/01/84-5/31/87, *Memory for speech in preschool children.*

### **Other Prior Extramural Awards**

Morey, C.C., PI. 1 F31 MH074205-01A2. NIMH Predoctoral Fellowship (NRSA). *Domain-general storage in working memory.* Faculty Supervisor. 6/1/2006 – 8/31/2007.  
Cowan, N., P.I. (with co-PIs Scott Saults & Kenneth Sher). *Effects of acute alcohol intoxication on working-memory capacities of the focus of attention.* Alcoholic Beverage Medical Research Foundation, 6/1/03 – 5/31/05.  
Preceptor for Hagglund, K., P.I., *The Missouri rehabilitation research training program.* NIH, 7/1/00 - 6/30/05.  
Collaborator for Towse, J., P.I. (2003). *Response timing in children's working memory.* Economic and Social Research Council (ESRC), 11/6/03 – 11/5/04.  
Cowan, N. Benjamin Meaker Fellowship, University of Bristol, United Kingdom, 9/00 – 12/00.  
Associate Investigator: M.T. Maybery (Chief Investigator), D.M. Jones, & N. Cowan, *Working memory: Fundamental processes common to the verbal and spatial modalities?* Australian Research Council Grant, for 1999.  
Sponsor for Ron Gillam, NIH/CIDA Clinical Investigator Development Award, 7/1/91-6/30/96, *Modality specific memory mechanisms in SLI [specifically language-impaired] children.*  
Cowan, N. Postdoctoral Fellowship, NIMH, 1/22/81-9/1/82. *Memory factors in children's word order comprehension.* Sponsor: Martin D. S. Braine, New York University.

### **Books:**

Courage, M.L., & Cowan, N. (eds.) (2009). *The development of memory in infancy and childhood.* Hove, U.K.: Psychology Press.  
Cowan, N. (2005). *Working memory capacity.* Hove, East Sussex, UK: Psychology Press.  
Cowan, N. (ed.) (1997). *The development of memory in childhood.* Hove, East Sussex, UK: Psychology Press. (Paperback edition: 1997)  
Cowan, N. (1995). *Attention and memory: An integrated framework.* Oxford Psychology Series, No. 26. New York: Oxford University Press. (Paperback edition: 1997)

### **Journal Articles (163), Book Chapters (47), and Web Logs (1), reverse chronological order:**

211. Cowan, N., & Saults, J.S. (in press). When does a good working memory counteract proactive interference? Surprising evidence from a probe recognition task. *Journal of Experimental Psychology: General.*

210. Cowan, N., Rouder, J.N., Blume, C.L., & Saults, J.S. (in press). Models of verbal working memory capacity: What does it take to make them work? *Psychological Review*.
209. Dewar, M., Alber, J., Butler, C., Cowan, N., & Della Sala, S. (in press). Brief wakeful resting boosts new memories over the long term. *Psychological Science*.
208. Dewar, M., Pesallaccia, M., Cowan, N., Provinciali, L., & Della Sala, S. (2012). Insights into spared memory capacity in amnesic MCI and Alzheimer's Disease via minimal interference. *Brain and Cognition*, 78, 189-199.
207. Becker, T. M., Cicero, D. C., Cowan, N., & Kerns, J. G. (in press). Cognitive control components and speech symptoms in people with schizophrenia. *Psychiatry Research*.
206. Gilchrist, A.L., & Cowan, N. (2011). Can the focus of attention accommodate multiple separate items? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 37, 1484-1502. PMC3197943
205. Cowan, N., AuBuchon, A.M., Gilchrist, A.L., Ricker, T.J., & Saults, J.S. (2011). Age differences in visual working memory capacity: Not based on encoding limitations. *Developmental Science*, 14, 1066-1074. PMC3177168
204. Cowan, N. (2011). The focus of attention as observed in visual working memory tasks: Making sense of competing claims. *Neuropsychologia*, 49, 1401-1406. PMC3095706
203. Rouder, J.N., Morey, R.D., Morey, C.C., & Cowan, N. (2011). How to measure working-memory capacity in the change-detection paradigm. *Psychonomic Bulletin & Review*, 18, 324-330. PMC3070885
202. Cowan, N., Li, D., Moffitt, A., Becker, T.M., Martin, E.A., Saults, J.S., & Christ, S.E. (2011). A neural region of abstract working memory. *Journal of Cognitive Neuroscience*, 23, 2852-2863. PMC3138911
201. Gilchrist, A.L., & Cowan, N. (2012). Chunking. In V. Ramachandran (ed.) *Encyclopedia of human behavior*, 1, 476-483. Academic Press.
200. Morey, C.C., Cowan, N., Morey, R.D., & Rouder, J.N. (2011). Flexible attention allocation to visual and auditory working memory tasks: Manipulating reward induces a tradeoff. *Attention, Perception, & Psychophysics*, 73, 458-472. PMC3037478
199. Cowan, N., Hismjatullina, A., AuBuchon, A.M., Saults, J.S., Horton, N., Leadbitter, K., & Towse, J. (2010). With development, list recall includes more chunks, not just larger ones. *Developmental Psychology*, 46, 1119-1131.
198. Lee, E., Cowan, N., Vogel, E.K., Rolan, T., Valle-Inclán, F., & Hackley, S.A. (2010). Visual working memory deficits in Parkinson's patients are due to both reduced storage capacity and impaired ability to filter out irrelevant information. *Brain*, 133, 2677-2689.
197. Ricker, T.J., & Cowan, N. (2010). Loss of visual working memory within seconds: The combined use of refreshable and non-refreshable features. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36, 1355-1368. PMCID: PMC2970679
196. Cowan, N. (2011). Covert pronunciation and rehearsal. In N.M. Seel (ed.),

- Encyclopedia of the sciences of learning*. Springer: Heidelberg, Germany. DOI 10.1007/978-1-4419-1428-6.
195. Ricker, T.J., Cowan, N., & Morey, C.C. (2010). Visual working memory is disrupted by covert verbal retrieval. *Psychonomic Bulletin & Review*, *17*, 516-521. PMC3050528
194. Cowan, N. (5 November, 2009). Disproving myself. *Psychology Today*, web log (listed as an Essential Read on the Psychology Today web site, 5 November 2009).
193. Dewar, M., Della Sala, S., Beschin, N., & Cowan, N. (2010). Profound retroactive interference in anterograde amnesia: What interferes? *Neuropsychology*, *24*, 357-367.
192. Cowan, N. (In press). Working memory. In H. Pashler (ed.), *Encyclopedia of the mind*. Sage.
191. Cowan, N. (2010). Multiple concurrent thoughts: The meaning and developmental neuropsychology of working memory. *Developmental Neuropsychology*, *35*, 447-474.
190. Cowan, N. (In press). Focused and divided attention to the eyes and ears: A research journey. In J.M. Wolfe & L. Robertson, Festschrift for Ann Treisman. Oxford, U.K.: Oxford University Press.
189. Cowan, N., Morey, C.C., AuBuchon, A.M., Zwilling, C.E., Gilchrist, A.L., & Sauls, J.S. (2011). New insights into an old problem: Distinguishing storage from processing in the development of working memory. In P. Barrouillet & V. Gaillard (eds.), *Cognitive development and working memory: A dialogue between neo-Piagetian theories and cognitive approaches*. Hove, UK: Psychology Press. (pp. 137-150)
188. Gilchrist, A.L., Cowan, N., & Naveh-Benjamin, M. (2009). Investigating the childhood development of working memory using sentences: New evidence for the growth of chunk capacity. *Journal of Experimental Child Psychology*, *104*, 252-265. PMC2752294 doi:10.1016/j.jecp.2009.05.006
187. Cowan, N. (2009). Working memory from the trailing edge of consciousness to neurons. Review of T. Klingberg, *The overflowing brain: Information overload and the limits of working memory*. *Neuron*, *62*, 13-16.
186. Ricker, T.J., AuBuchon, A., & Cowan, N. (2010). Working memory. In L. Nadel (Ed.), *Wiley Interdisciplinary Reviews: Cognitive Science*, *1*, 573-585.
185. Chen, Z., & Cowan, N. (2009). How verbal memory loads consume attention. *Memory & Cognition*, *37*, 829-836. PMCID: PMC2804027
184. Cowan, N. (2009). Capacity limits and consciousness. In T. Baynes, A. Cleeremans, & P. Wilken (eds.), *Oxford companion to consciousness*. New York: Oxford University Press (pp. 127-130)
183. Cowan, N. (2009). By their bootstraps: Brain imaging in the Show-Me State. *RT Image*, *22*(8), February 23. <http://www.rt-image.com/>
182. Cowan, N. (2009). A brief history of experimental psychology, 1850 – 2125. APA Division 3 presidential essay. *The Experimental Psychology Bulletin*, *13*(1).

<http://www.apa.org/divisions/div3/Newsletter2009-13-1/Newsletter2009-13-1-a.htm>

181. Cowan, N. (2010). The magical mystery four: How is working memory capacity limited, and why? *Current Directions in Psychological Science*, *19*, 51-57.
180. Dewar, M., Fernandez Garcia, Y., Cowan, N., & Della Sala, S. (2009). Delaying interference enhances memory consolidation in amnesic patients. *Neuropsychology*, *23*, 627-634.
179. Cowan, N. (2011). Working memory and attention in language use. In J. Guendouzi, F. Loncke, & M.J. Williams (eds.), *The Handbook of psycholinguistic and cognitive processes: Perspectives in communication disorders*. New York: Taylor & Francis. (pp. 75-97)
178. Gilchrist, A.L., & Cowan, N. (2010). Conscious and unconscious aspects of working memory. In I. Winkler & I. Czigler (eds.), *Unconscious memory representations in perception: Processes and mechanisms in the brain. Advances in Consciousness research*. Vol. 78. Amsterdam: John Benjamins. (Pp. 1-35)
177. Dewar, M.T., Della Sala, S., & Cowan, N. (2010). Forgetting due to retroactive interference in amnesia: Findings and implications. In S. Della Sala, *Forgetting. Current Issues in Memory*. Psychology Press. (Pp. 185-209)
176. Cowan, N., & Rouder, J.N. (2009). Comment on "Dynamic shifts of limited working memory resources in human vision." *Science*, *323* (no. 5916), 877. PMC2730043
175. Cowan, N., Morey, C.C., AuBuchon, A.M., Zwillig, C.E., & Gilchrist, A.L. (2010). Seven-year-olds allocate attention like adults unless working memory is overloaded. *Developmental Science*, *13*, 120-133.
174. Cowan, N. (2008). Arrogance, social consensus, and experimental psychology. APA Division 3 presidential essay. *The Experimental Psychology Bulletin*, vol. 12, #2.
173. Chen, Z., & Cowan, N. (2009). Core verbal working memory capacity: The limit in words retained without covert articulation. *Quarterly Journal of Experimental Psychology*, *62*, 1420-1429. PMC2693080
172. Gilchrist, A.L., Cowan, N., & Naveh-Benjamin, M. (2008). Working memory capacity for spoken sentences decreases with adult ageing: Recall of fewer, but not smaller chunks in older adults. *Memory*, *16*, 773-787. PMC2610466
171. Cowan N (2009), Sensory and Immediate Memory. In W.P. Banks (editor), *Encyclopedia of Consciousness*, Volume 2. Oxford: Elsevier. (pp. 327-339)
170. Cowan, N. (2008). The rest of the story: The size of thought. *Scientific American Mind*, June/July, 32-35.
169. Shelton, J.T., Elliott, E.M., & Cowan, N. (2008). Attention and working memory: Tools for understanding consciousness. *Psyche*, *14*(8), 0-6.
168. Cowan, N. (2008). Autobiography of the president-elect. *The Experimental Psychology Bulletin*, vol. 12, #1. (web publication:

- <http://www.apa.org/divisions/div3/Newsletter2008-12-1/Newsletter2008-12-1-b.htm>)
167. Rouder, J.N., Morey, R.D., Cowan, N., Zwilling, C.E., Morey, C.C., & Pratte, M.S. (2008). An assessment of fixed-capacity models of visual working memory. *Proceedings of the National Academy of Sciences (PNAS)*, *105*, 5975-5979. PMC2329704
  166. Cowan, N. (2008). Working memory storage capacity and efficiency. *Mind Matters*. (This is a web publication by *Scientific American*.). Posted January 28, 2008
  165. Bunting, M.F., Cowan, N., & Colflesh, G.H. (2008). The deployment of attention in short-term memory tasks: Tradeoffs between immediate and delayed deployment. *Memory & Cognition*, *36*, 799-812. PMC2667108
  164. Towse, J.N., Cowan, N., Hitch, G.J., & Horton, N.J. (2008). The recall of information from working memory: insights from behavioural and chronometric perspectives. *Experimental Psychology*, *55*, 371-383.
  163. Towse, J.N., Cowan, N., Horton, N.J., & Whytock, S. (2008). Task experience and children's working memory performance: A perspective from recall timing. *Developmental Psychology*, *44*, 695-706.
  162. Saults, J., Cowan, N., Sher, K.J., & Moreno, M.V. (2007). Differential effects of alcohol on working memory: Distinguishing multiple processes. *Experimental and Clinical Psychopharmacology*, *15*, 576-587.
  161. Cowan, N., & AuBuchon, A.M. (2008). Short-term memory loss over time without retroactive stimulus interference. *Psychonomic Bulletin & Review*, *15*, 230-235. PMC2662695
  160. Saults, J.S., & Cowan, N. (2007). A central capacity limit to the simultaneous storage of visual and auditory arrays in working memory. *Journal of Experimental Psychology: General*, *136*, 663-684.
  159. Cowan, N., & Chen, Z. (2009). How chunks form in long-term memory and affect short-term memory limits. In A. Thorn & M. Page (eds). *Interactions between short-term and long-term memory in the verbal domain*. Hove, East Sussex, UK: Psychology Press. (pp. 86-107)
  158. Cowan, N. (2008). What are the differences between long-term, short-term, and working memory? In W. Sossin, J.-C. Lacaille, V.F. Castellucci & S. Belleville (eds.), "The essence of memory." *Progress in Brain Research*, Vol. 169. Amsterdam: Elsevier / Academic Press. (pp. 323-338)
  157. Halford, G.S., Cowan, N., & Andrews, G. (2007). Separating cognitive capacity from knowledge: A new hypothesis. *Trends in Cognitive Sciences*, *11*, 236-242. PMC2613182
  156. Cowan, N., Morey, C.C., Saults, J.S., Chen, Z., & Gilchrist, A.L. (2008). Theory and measurement of working memory capacity limits. In Ross, B.H. (ed.), *The psychology of learning and motivation*, *49*, 49-104.
  155. Cowan, N. (2008). Working memory. In N.J. Salkind (ed.), *Encyclopedia of*

- Educational Psychology*, vol. 2. London: Sage. (pp. 1015-1016)
154. Cowan, N., & Morey, C.C. (2007). How can dual-task working memory retention limits be investigated? *Psychological Science*, *18*, 686-688. PMC2615808
  153. Cowan, N. (2008). Sensory Memory. In H.L. Roediger, III (Ed.), *Cognitive psychology of memory*. Vol. 2 of *Learning and memory: A comprehensive reference*, 4 vols. (J.Byrne, Editor). Oxford: Elsevier. (pp. 23-32)
  152. Courage, M.L., & Cowan, N. (2009). What's new in research on the development of children's memory?. In M. Courage & N. Cowan (eds.), *The development of memory in infancy and childhood*. Hove, East Sussex, UK: Psychology Press. (pp. 1-10)
  151. Cowan, N. (2007). What can infants tell us about working 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*. New York: Oxford University Press. (Pp. 126-150)
  150. Cowan, N., & Alloway, T. (2009). The development of working memory. In M. Courage & N. Cowan (eds.), *The development of memory in infancy and childhood*. Hove, East Sussex, UK: Psychology Press. (pp. 303-342)
  149. Bunting, M.F., Cowan, N., & Saults, J.S. (2006). How does running memory span work? *Quarterly Journal of Experimental Psychology*, *59*, 1691-1700.
  148. Dewar, M.T., Cowan, N., & Della Sala, S. (2007). Forgetting due to retroactive interference: A fusion of Müller and Pilzecker's (1900) early insights into everyday forgetting and recent research on anterograde amnesia. *Cortex*, *43*, 616-634.
  147. Cowan, N., Saults, J.S., & Morey, C.C. (2006). Development of working memory for verbal-spatial associations. *Journal of Memory and Language*, *55*, 274-289.
  146. Naveh-Benjamin, M., Cowan, N., Kilb, A., & Chen, Z. (2007). Age-related differences in immediate serial recall: Dissociating chunk formation and capacity. *Memory & Cognition*, *35*, 724-737. PMC1995413
  145. Cowan, N., & Morey, C.C. (2006). Visual working memory depends on attentional filtering. *Trends in Cognitive Sciences*, *10*, 139-141.
  144. Cowan, N., Fristoe, N.M., Elliott, E.M., Brunner, R.P., & Saults, J.S. (2006). Scope of attention, control of attention, and intelligence in children and adults. *Memory & Cognition*, *34*, 1754-1768. PMC1868392
  143. Cowan, N., Kane, M.J., Conway, A.R.A., & Ispa-Cowan, A.J. (2006). Stupid brain! Homer's working memory odyssey. In A. Brown, *The psychology of the Simpsons: D'Oh!* Dallas: BenBella Books. (pp. 49-64)
  142. Cowan, N., Morey, C.C., Chen, Z., & Bunting, M.F. (2007). What do estimates of working memory capacity tell us? In N. Osaka, R.H. Logie, & M. D'Esposito (eds.), *The*

- cognitive neuroscience of working memory*. Oxford, U.K.: Oxford University Press. (pp. 43-58)
141. Cowan, N., Naveh-Benjamin, M., Kilb, A., & Saults, J.S. (2006). Life-Span development of visual working memory: When is feature binding difficult? *Developmental Psychology*, *42*, 1089-1102. PMC1635970
  140. Cowan, N., Elliott, E.M., Saults, J.S., Nugent, L.D., Bomb, P., & Hismjatullina, A. (2006). Rethinking speed theories of cognitive development: Increasing the rate of recall without affecting accuracy. *Psychological Science*, *17*, 67-73. PMC2615186
  139. Chen, Z., & Cowan, N. (2005). Chunk limits and length limits in immediate recall: A reconciliation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *31*, 1235-1249.
  138. Cowan, N., Elliott, E.M., Saults, J.S., Morey, C.C., Mattox, S., Hismjatullina, A., & Conway, A.R.A. (2005). On the capacity of attention: Its estimation and its role in working memory and cognitive aptitudes. *Cognitive Psychology*, *51*, 42-100. PMC2673732
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2. Cowan, N., & Morse, P. A. (1979). Influence of task demands on the categorical versus continuous perception of vowels. In J. J. Wolf & D. H. Klatt (Eds.), *Speech communication papers presented at the 97th meeting of the Acoustical Society of America*. New York: ASA.
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### Invited Lectures and Symposia:

- Cowan, N. (2012, May). *Remembering to attend and attending to remember: the convoluted relation between attention and memory*. Department of Psychology, University of Zurich, Switzerland
- Cowan, N. (2012, March). *The control and storage of information in human working memory*. Atneave Lecture, Department of Psychology, University of Oregon
- Cowan, N. (2012, March) *Working memory and executive control: Does control control storage or does storage control control?* Arizona State University, 2nd Cognitive Symposium, Working Memory and Cognitive Control, Tempe, AZ.
- Cowan, N. (2011, December). *Attention limits in working memory*. Invited talk, Universidade Federal do Rio Grande do Norte, Natal, Brazil
- Cowan, N. (2011, November). *Attention limits in working memory*. Invited talk, Federal University of Sao Paulo, Brazil.
- Cowan, N. (2011, November). *How many things can you keep in mind?* Invited presentation to the Showme Chapter of the American Academy of Professional Coders (AAPC), Columbia, MO.
- Cowan, N. (2011, August). Invited commentator, First International Workshop on Cognitive and Working Memory Training, University of Maryland Center for the Advanced Study of Language (CASL), College Park, MD.
- Cowan, N. (2011, May). *Explaining the development of working memory capacity: What doesn't work?* In D. Balota, organizer, Varieties of Attentional Control: Working Memory, Lifespan changes, and Performance under the Wrath of God. Fellows' symposium. Annual convention of the Midwestern Psychological Association, Chicago, IL.
- Cowan, N. (2011, March). *Working memory and selective attention*. Invited presentation to the Southern Society for Philosophy and Psychology, New Orleans.
- Cowan, N. (2011, February). Discussant, *Symposium on Realistic Decision Making*, Columbia, MO.
- Cowan, N. (2010, October). *Visual objects and spoken words compete in working memory*. Invited talk presented to the Exploring the Mind lecture series, University of California, Davis, CA.
- Cowan, N. (2010, August). *Mental tricks that have confounded our search for basic working memory limits -- until now!* Paper presented within a symposium by J. Wixted, chair, "Quantifying the contents of working memory." Annual convention of the American Psychological Association, San Diego, CA.
- Cowan, N. (2010, June). *An embedded processes view of working memory*. Working Memory Workshop, Indianapolis, IN.

- Cowan, N. (2010, April). *Attention as inclusion and attention as exclusion: evidence from child development*. Paper presented at the annual convention of the Society of Experimental Psychologists, Philadelphia, PA.
- Cowan, N. (2010, April). *How many things can you keep in mind?* Saturday Morning Science series, Columbia, MO.
- Cowan, N. (2010, April). *A core component of working memory in the mind and brain*. Neurology Grand Rounds, University of Missouri, Columbia, MO.
- Cowan, N., & Naveh-Benjamin, M. (2010, March). *A modest effect of aging on capacity, and factors that magnify it*. Workshop on Working Memory and Ageing, Edinburgh, U.K.
- Cowan, N. (2010, February). *A core working memory faculty in the brain*. First Quench Hour Presentation, Brain Imaging Center, University of Missouri.
- Cowan, N. (2009, August). *Central working memory and its development explored: Keeping important things in an all-purpose basket*. Presidential Address, Division 3, Annual Convention of the American Psychological Association, Toronto.
- Cowan, N. (2009, February). *Errors in working/short-term memory: Review of models, methods and main findings*. Invited talk presented to the Development and Pilot Testing of a Technical Standard Operating Procedure (SOP) for Assessment of Health Product Names for Look-Alike/Sound-Alike Attributes, Education Session for Health Canada, Ottawa, Canada.
- Cowan, N., Morey, C.C., AuBuchon, A.M., Zwilling, C.E., & Gilchrist, A.L. (2009, April). *New insights into an old Problem: Distinguishing storage from processing in the development of working memory*. Part of a symposium organized by C. Jarrold, The Development of Working Memory: Interactions Between Processing and Storage Demands. Biennial Meeting of the Society for Research in Child Development, Denver.
- Cowan, N. (2008, September). *Amnesia and interference*. Invited talk presented to the Mid-Missouri chapter of the Society for Neuroscience, Columbia, Missouri.
- Cowan, N. (2008, July). *Intelligence, cognitive control, and working memory capacity: Three distinct relatives of selective attention*. Invited presentation in a symposium entitled Intelligence and Cognitive Control, XXIX International Congress of Psychology, Berlin.
- Cowan, N., Morey, C.C., AuBuchon, A.M., Zwilling, C.E., Gilchrist, A.L., & Saults, J.S. (2008, July). *New insights into an old problem: Distinguishing storage from processing in the development of working memory*. Invited address at the Cours Avancé des Archives Jean Piaget, Geneva.
- Cowan, N. (2008, April). *How much of working memory is activated long-term memory?* Keynote address at the ESRC seminar, "Themes and trends in memory research: Beyond the retention of list sequences. A workshop focusing on links between long-term memory and immediate memory." Lancaster, UK.
- Cowan, N. (2007, September). *40 years of research on information processing: Are the old ways best?* Talk presented at G.U.V. as "oldie," Iowa City, IA.
- Cowan, N., Naveh-Benjamin, M., Kilb, A., & Saults, J.S. (2007, May). *Lifespan development of object-location binding in working memory: distinguishing between salience and precision*. Paper within a symposium by C.S. Li & U. Lindenberger entitled *Development of memory binding mechanisms across the life span*. Annual Convention of the American Psychological Society, Washington, D.C.
- Cowan, N. (2007, March). *How does short-term working memory operate? Making use of age differences*. Talk presented to the Department of Psychology, Western Illinois University, Macomb, IL.
- Cowan, N. (2007, May). *Differences between long-term, short-term, and working memory*. Paper presented at the Eleventh International Conference on Cognitive and Neural Systems, Boston.
- Cowan, N. (2007, May). *What are the differences between long-term, short-term, and working memory?* Paper presented at XXIXe International Symposium of GRSNC/CRSN, "The Essence of Memory," Montreal, Canada.
- Cowan, N. (2007, January). *How does short-term working memory operate? Making use of age differences*. Talk presented to the Educational Psychology Program, University of Missouri.
- Cowan, N. (2006, October). *Forgetting from short-term memory, then and now*. Paper presented at PisoniFest, Bloomington, Indiana.
- Cowan, N. (2006, September). *Forgetting from short-term memory, then and now*. Paper presented to the cognition and neuroscience area of the Department of Psychological Sciences, University of Missouri.
- Cowan, N. (2006, September). *How does short-term working memory operate? Making use of age differences*.

- Paper presented to the developmental area of the Department of Psychological Sciences, University of Missouri.
- Cowan, N., Fristoe, N.M., Elliott, E.M., Brunner, R.P., & Saults, J.S. (2006, July). *Distinguishing between the scope and control of attention in children and adults*. Paper presented within a symposium entitled "Working memory" (S. Gathercole, moderator) at the Fourth International Conference on Memory (ICOM-4), Sydney, Australia.
- Cowan, N. (2006, July). *When does time allow forgetting?* Paper presented within a symposium entitled "The role of time in short-term memory" (S. Lewandowsky, moderator) at the Fourth International Conference on Memory (ICOM-4), Sydney, Australia.
- Cowan, N., Fristoe, N.M., Elliott, E.M., Brunner, R.P., & Saults, J.S. (2006, July). *Distinguishing between the scope and control of attention in children and adults*. Invited talk presented at the University of Western Australia, Perth, Australia.
- Cowan, N. (2006, July). *When does time allow forgetting?* Invited talk presented at a workshop entitled *Memory and Concept Formation*, Margaret River, Australia.
- Cowan, N. (2006, March). *How is working memory capacity limited? Studies of time, attention, individual differences, and human development*. University of Kansas, Lawrence.
- Cowan, N., Saults, J.S., Sher, K.J., & Moreno, M.V. (2005, October). *Effects of acute alcohol intoxication on working-memory capacities of the focus of attention*. Invited talk presented at the 33rd International Medical Advisory Group Conference of the Alcoholic Beverage Medical Research Foundation, Chicago.
- Cowan, N., Elliott, E.M., Saults, J.S., & Morey, C.C. (2005, August). *Working-memory capacity limits and adjusting attention*. Invited talk presented at the Eleventh Cognitive Science Association for Interdisciplinary Learning (CSAIL), Hood River, Oregon.
- Cowan, N. (2005, June). *Time limits and item limits in working memory*. Invited talk presented at the University of York and the University of Edinburgh.
- Dewar, M., Della Sala, S., & Cowan, N. (2005, June). *Forgetting due to retroactive interference: A fuse of Müller and Pilzecker's (1900) early insights into everyday forgetting and recent research on anterograde amnesia*. TENNET, an annual convention of Theoretical and Experimental Neuropsychology, Montreal.
- Cowan, N., Elliott, E.M., Saults, J.S., & Hismjatullina, A. (2005, April). *Does the speed of recall influence the quality of immediate recall?* Talk presented as part of the symposium by C. Jarrold, "Speed and Span: Timing Issues in the Development of Children's Working Memory," Biennial meeting of the Society for Research in Child Development, Atlanta.
- Cowan, N., & Engle, R.W. (2005, May). *On Four Aspects of Working Memory: Causation, Activation, Time, and Decision-making*. Invited Symposium, Midwestern Psychological Association annual meeting, Chicago.
- Cowan, N. (2005, May). *The mystery of time in working memory*. Talk presented as part of the invited symposium entitled "On Four Aspects of Working Memory: Causation, Activation, Time, and Decision-making," Midwestern Psychological Association annual meeting, Chicago.
- Cowan, N. (2005, January). *Working memory and adjustable attention*. Invited talk in a symposium presented to the Society for Applied Research in Memory and Cognition, Wellington, New Zealand.
- Cowan, N. (2005, February). *Working-memory Capacity and Attention*. Invited talk presented to the School of Behavioral and Brain Sciences, University of Texas, Dallas.
- Cowan, N. (2004, August). *Limits of Attention in Working-Memory Storage*. Invited address presented at the second International Conference on Working Memory, Kyoto, Japan.
- Cowan, N. (2004, August). *Child development as a portal to working memory processes*. Invited talk within a symposium entitled Aspects of Working Memory (Alan Baddeley, Chair). XXVIII International Congress of Psychology, Beijing, China.
- Cowan, N. (2004, August). *Attention limits in working memory*. Invited talk within a symposium entitled Attention and Memory (Neil Mulligan, Chair). XXVIII International Congress of Psychology, Beijing, China.
- Cowan, N. (2004, May). *Remembering what you're saying and saying what you're remembering: The difficulties of interpreting and translating as viewed by a cognitive psychologist*. Invited address presented at the 25th Educational Conference of the National Association of Judiciary Interpreters and Translators, Denver, CO.

- Cowan, N. (2004, May). *Working-memory Capacity and Adjustable Attention*. Invited address presented at the annual convention of the American Psychological Society, Chicago, IL.
- Cowan, N. (2004, April). Keynote address. *Methods to examine the growth of working-memory capacity*. Second European Working Memory Symposium (EWOMS-2), Dijon, France.
- Cowan, N. (2004, April). *What's left of the magical number 7? Some limits on immediate-memory capacity*. Invited address presented to the Midwestern Psychological Association, Chicago, IL.
- Cowan, N. (2004, February). *Measures of working memory and accounts of individual differences in aptitude*. Talk presented in the Cognition & Neuroscience colloquium series, University of Missouri, Columbia.
- Cowan, N. (2004, February). *Scholastic ability and the development of working-memory capacity*. Talk presented in the Developmental colloquium series, University of Missouri, Columbia.
- Cowan, N. (2003, October). *Identifying a capacity limit of working memory*. Invited talk presented at the Department of Psychology, University of York, England, U.K., and to the Department of Psychology, Lancaster University, England, U.K.
- Cowan, N. (2003, May). *Measuring working-memory capacity*. Invited talk presented at the Institute for Psychology, Hungarian Academy of Sciences, Budapest, Hungary. Presented also in Dijon, France and at the University of Helsinki, Finland in the same month.
- Cowan, N., & Sauls, J.S. (2003, May). *Auditory sensory memory works better than visual sensory memory in immediate recall. Why?* Invited talk presented in the symposium, "Sensory memory and working memory" (organizer: Erich Schröger) as part of the Third International Workshop on Mismatch Negativity and Auditory Functions and Dysfunctions, Lyon, France.
- Cowan, N. (2003, January). *Working-memory capacity limits in a theoretical context*. Invited talk presented at the 4th Tsukuba International Conference on Memory (Human Learning and Memory: Advances in Theory and Application), Tsukuba, Japan.
- Cowan, N., Beschin, N., & Della Sala, S. (2002, October). *Memory disorder as vulnerability to interference*. Paper presented within a symposium chaired by S. Della Sala, Stimulus wars: Interference between stimuli in memory. Presented at the annual convention of the Memory Disorder Research Society, San Francisco.
- Cowan, N. (2002, May). *Measuring children's working memory capacity*. Invited talk presented at the International Workshop on Young Children's Cognitive Development: Interrelationships among Executive Functioning, Working Memory, Verbal Ability, and Theory of Mind, Castle Hirschberg, Germany.
- Cowan, N. (2002, March). *Resistance to interference in working memory*. Invited talk presented to the Department of Psychology, University of Illinois, Champaign-Urbana, IL.
- Cowan, N. (2002, January). *Development of working memory: Some key parameters*. Invited talk presented at the Center for Cognitive Science, Ohio State University, Columbus, OH.
- Cowan, N. (2001, December). *A comparison of auditory and visual working memory processes*. Invited talk presented to the Department of Psychology, Indiana University, Bloomington, IA.
- Cowan, N. (2001, August). *Structured freedom: Making the undergraduate research experience a success*. McNair Program, University of Missouri.
- Cowan, N. (2001, July). *Measures of the childhood development of short-term memory capacity limits*. Presented in a symposium entitled "The mechanisms of verbal short-term memory and its development," C. Hulme & M. Poirier, co-Chairs. Third International Conference on Memory, Valencia, Spain.
- Cowan, N. (2001, July). *In what sense is working memory (WM) an activated subset of long-term memory (LTM)?* Presented in a symposium entitled "The connection between working memory and long-term memory," E. Service, Chair. Third International Conference on Memory, Valencia, Spain.
- Cowan, N. (2001, July). *Processing limits of selective attention and working memory: Potential implications for interpreting*. Presented at "Complex cognitive processes: Simultaneous interpreting as a research paradigm." Second Ascona Workshop, Ascona, Switzerland.
- Cowan, N. (2001, May). *The magical number 3.5, plus or minus 0.5: Some old and some recent ideas about working memory capacity*. Keynote address of the Showme Mental State conference, University of Missouri, Columbia, MO.
- Cowan, N. (2000, Fall). *Childhood development of some basic parameters of working memory*. Presented by invitation at 12 sites: the Institute for Cognitive Sciences in Paris, Cardiff University, University of Warwick, University College London Institute for Cognitive Neuroscience, Royal Holloway University, University of

- York, University of Aberdeen, University of Bristol (*Benjamin Meaker Lecture*), Cambridge University (*Alan Baddeley Lecture*), University of Loughborough, University of Southampton, and Oxford University.
- Cowan, N. (2000, December). *Working memory parameters in the childhood development of working memory*. Keynote address to the annual meeting of the Mathematics, Statistics, and Computing Section of the British Psychological Society, London, UK.
- Cowan, N. (2000, September). *The working-memory storage capacity concept and its viability: Understanding nuances and overcoming nuisances*. Keynote address to the 17th annual meeting of the Cognitive Psychology Section of the British Psychological Society, Essex, England, UK.
- Cowan, N. (2000, July). *On working memory capacity: Is there a numerical limit?* Invited paper presented within a symposium on working memory capacity limits at the International Congress of Psychology, Stockholm, Sweden.
- Cowan, N. (2000, April). *Some basic parameters in the development of working memory in childhood*. Invited talk presented at the Psychology Department, University of Indiana, Bloomington.
- Cowan, N. (2000, February). *Some basic parameters in the development of working memory*. Invited talk presented at the Psychology Department, Washington University, St. Louis.
- Cowan, N. (2000, February). *Some basic parameters in the development of working memory*. Invited talk presented at the Psychology Department, University of California, Santa Cruz.
- Cowan, N. (1999, December). *Some basic parameters in the development of working memory*. Invited address to the Second Tsukuba International Conference on Memory, Tsukuba, Japan.
- Cowan, N. (1999, August). *Working memory development: Are there fundamental processing parameters that change with development?* Invited talk presented at the University of Western Australia, Perth, Australia.
- Cowan, N. (1999, August). *The relation between attention and memory*. Invited talk presented to the Centre for Clinical Research in Neuropsychiatry, University of Western Australia, Perth, Australia.
- Cowan, N. (1999, August). *Working memory development: Are there fundamental processing parameters that change with development?* Invited talk presented at the University of Queensland, St. Lucia, Australia.
- Cowan, N. (1999, June). *The ravages of absolute and relative amounts of time in short-term recall*. Invited paper presented at the Festschrift for Robert Crowder, Yale University, New Haven, CT.
- Cowan, N. (1999, May). *Working memory development: Are there fundamental processing parameters that change with development?* Invited talk presented at Humboldt University, Berlin.
- Cowan, N. (1999, May). *Working memory development: Are there fundamental processing parameters?* Invited paper presented at the Workshop on Working Memory, Institut für Allgemeine Psychologie, Leipzig, Germany.
- Cowan, N. (1999, April). *Attention and working memory*. Invited talk presented to the Psi Chi chapter at Westminster College, Fulton, MO.
- Cowan, N. (1999, April). *Working memory development: Are there fundamental processing parameters that change with development?* Invited talk presented at the Nathan Kline Institute for Psychiatric Research, Orangeburg, NY.
- Cowan, N. (1998, November). *The role of attention in short-term serial recall*. Invited paper presented at the Preconference on Attention and Memory, Dallas, TX.
- Cowan, N. (1998, April). *Children's memories of yestersecond: The development of immediate memory persistence, processing speed, and storage capacity*. Invited paper presented at the Department of Psychology, Washington University, St. Louis, MO.
- Cowan, N. (1998, July). *Children's memories of yestersecond: The development of immediate memory persistence, processing speed, and storage capacity*. Invited paper presented at the National Institutes of Health, Bethesda, MD.
- Cowan, N. (1997, July). *An embedded-processes model of working memory*. Invited paper presented at the Models of Working Memory Symposium, Boulder, CO.
- Cowan, N., & Gillam, R.B. (1997, May). *Working memory in children with and without language impairment*. Invited paper presented to the Midwestern Psychological Association, Chicago.
- Cowan, N. (1997, April). *Memories of yester-second: The role of decay in working memory*. Invited talk presented to the Psychology Department at the Georgia Institute of Technology, Atlanta.
- Cowan, N. (1997, April). *Decay and interference in short-term memory*. Invited paper presented as part of the

- Ellis-Battig Symposium of the Rocky Mountain Psychological Association annual conference, Reno.
- Cowan, N. (1997, February). *Memories of yester-second: The role of decay in working memory*. Invited talk presented to the Psychology Department at the University of Louisville.
- Cowan, N. (1996, July). Discussant, symposium entitled "The Organization of Memory Representations in Immediate Recall." International Conference on Memory, Padua, Italy.
- Cowan, N. (1996, July). *Separate rehearsal and retrieval mechanisms in the development of memory span*. Invited paper in a symposium entitled "Mechanisms of verbal short-term memory span and its development," International Conference on Memory, Padua, Italy.
- Cowan, N. (1995, November). Discussant, symposium entitled "Working Memory and Language." Annual convention of the Psychonomic Society, Los Angeles.
- Cowan, N. (1995, February). *The nature of auditory memory: Brain functioning and episodically related pitches (ERPs)*. Paper presented to the Department of Psychiatry, Albert Einstein College of Medicine.
- Multhaup, K.S., Balota, D.A., & Cowan, N. (1994, May). *Implications of aging, lexicality, and item length for the mechanisms underlying memory span*. Paper presented as part of a symposium: R. Engle, Chair, "New wrinkles on the articulatory loop," Midwestern Psychological Association, Chicago.
- Cowan, N., Wood, N.L., & Borne, D.N. (1994, May). *Reconfirmation of the short-term memory concept: Word-length effects in immediate versus through-list distractor recall*. Paper presented as part of a symposium: R. Engle, Chair, "New wrinkles on the articulatory loop," Midwestern Psychological Association, Chicago.
- Cowan, N. (1994, January). *Timing clues to the mechanisms of verbal short-term memory span*. Paper presented to the Psychology Department of the University of Texas, Austin.
- Cowan, N. (1993, October). *Response timing clues to the mechanisms of verbal short-term memory span*. Paper presented to the Psychology Department of Washington University, St. Louis.
- Cowan, N. (1993, May). *Controversies concerning short-term memory and selective attention*. Paper presented at the University of Helsinki, Finland.
- Cowan, N. (1992, October). *The timing of processes contributing to verbal short-term memory*. Paper presented to the Psychology Department of the University of Kansas, Lawrence, KS.
- Cowan, N. (1992, May). *Sensory memory, its traits, and its role in information processing*. Invited address presented at the Tenth International Conference on Event-Related Potentials of the Brain (EPIC X), Eger, Hungary.
- Cowan, N. (1991, November). *Activation, attention, and short-term memory*. Paper presented as part of a symposium entitled, "Short-term memory: Where do we stand?" Annual meeting of the Psychonomic Society, San Francisco, CA.
- Cowan, N. (1991, May). *Speakers' access to the phonemic structure of the syllable in word games*. Paper presented to the Experimental Psychology Laboratory of the Universite' Libre de Bruxelles, Brussels, Belgium.
- Cowan, N. (1991, April). *Memory for speech with and without attention and rehearsal*. Paper presented to the Psychology Department of the University of Helsinki, Finland, and to the Low Temperature Laboratory, Otaneimi, Finland.
- Cowan, N. (1990, November / December). *Memory for speech with and without attention and rehearsal*. Paper presented at 4 universities in Great Britain: Oxford, Manchester, Cardiff, and Cambridge
- Cowan, N. (1990, May). *How would you describe the information processing system?* Invited paper, Midwestern Psychological Association, Chicago, IL.
- Cowan, N. (1989, April). *Talking backward: An informative, unusual language skill*. Department of Psychology, University of Missouri, Rolla.
- Cowan, N. (1988, April). Moderator, paper session: *Concepts and categories*. Annual convention of the Midwestern Psychological Association, Chicago, IL.
- Cowan, N. (1987, May). Moderator, invited symposium: *Lexical acquisition, retention, and processing in children*. (Includes Cowan, N., *The development of rehearsal and phonological memory*.) Annual convention of the Midwestern Psychological Association, Chicago, IL.
- Cowan, N. (1986, April). *Auditory memory*. Workshop on Complex Sound Perception, Sarasota, Florida.
- Cowan, N. (1985, November). *Echoic storage in infancy*. Department of Human Development, University of

- Kansas, Lawrence, KS.
- Cowan, N. (1985, October). *A model of auditory sensory storage and integration*. Department of Psychology, Washington University, St. Louis, MO.
- Cowan, N., & Leavitt, L. A. (1985, August). *Evidence from fluent backward talkers on the development of speech representation*. University of Wisconsin Pediatrics Lecture Series, Madison, WI.
- Cowan, N. (1984, December). *Temporal properties of auditory memory*. Institute for Sensory Research, Syracuse University, Syracuse, NY.
- Cowan, N. (1984, January). *Studies in auditory memory development*. Haskins Laboratories, New Haven, CT.
- Cowan, N. (1984, January). *Identifying phonemes and syllables: Evidence from people who rapidly reorder speech*. Department of Psychology, Yale University, New Haven, CT.
- Cowan, N. (1983, November). *Identifying phonemes and syllables: Evidence from people who rapidly reorder speech*. Central Institute for the Deaf, St. Louis, MO.
- Cowan, N. (1983, November). *Studies in auditory memory development*. Department of Psychology, Washington University, St. Louis, MO.
- Cowan, N. (1983, February). *Identifying phonemes and syllables: Evidence from backward talkers*. Cognitive Science Group, University of Massachusetts/Amherst, MA.
- Cowan, N. (1981, November). *Processing of linguistic units: Evidence from fluent backward talkers*. New York Psycholinguistics Circle, New York, NY.

### Conference Presentations:

- Dewar, M., Alber, J., Butler, C., Cowan, N., & Della Sala, S. (2012, March). *Improving 7-day memory via a brief wakeful rest*. British Neuropsychological Society Spring Meeting, London.
- Cowan, N. (2012, February). *Test scaling in cognitive development: For some elementary processes, one need not adjust test difficulty*. Talk presented at the Methodology special conference of the Society for Research in Child Development, Tampa, FL.
- Ricker, T.J., & Cowan, N. (2011, November). Forgetting from working memory feature by feature. Poster presented at the annual convention of the Psychonomic Society, Seattle, WA.
- AuBuchon, A.M., & Cowan, N. (2011, November). Chunking in working memory does not depend on rehearsal. Paper presented at the annual convention of the Psychonomic Society, Seattle, WA.
- Gilchrist, A.L., & Cowan, N. (2010, November). *Limited to one item, or more than one item: Capacity limits in the focus of attention*. Poster presented at the annual convention of the Psychonomic Society, St. Louis.
- Ricker, T.J., & Cowan, N. (2010, November). *Forgetting from visual working memory: Time and attention both matter*. Paper presented at the annual convention of the Psychonomic Society, St. Louis.
- AuBuchon, A.M., & Cowan, N. (2010, August). To remember and forget: Individual differences in working memory span. Paper presented at the annual convention of the APA, San Diego.
- Boone, A., & Cowan, N. (2010, May). *What is the capacity of the focus of attention?* Paper presented at Psi Chi as part of the Midwestern Psychological Association convention, Chicago.
- Cowan, N. (2009, November). *After 50 years, the fate of attention and working memory theories*. Paper presented at the 50<sup>th</sup> annual convention of the Psychonomic Society, Boston.
- AuBuchon, A.M., & Cowan, N. (2009, November). *Remembering and forgetting concurrently: New benefits of high working memory span*. Poster presented at the 50<sup>th</sup> annual convention of the Psychonomic Society, Boston.
- Gilchrist, A.L., Cowan, N., & Naveh-Benjamin, M. (2009, November). *Chunk size or number of chunks: What explains working memory development?* Poster presented at the 50<sup>th</sup> annual convention of the Psychonomic Society, Boston.
- Cowan, N. (2009, April). *Working memory capacity redux*. Paper presented at the annual convention of the Society of Experimental Psychologists, Boulder, CO.
- Chen, Z., & Cowan, N. (2008, March). *Is There A Core Verbal Working Memory Capacity?* Research & Creative Activities Forum, Behavioral Sciences Division, MU. [NOTE: This talk won the second-place award.]
- Dewar, M., Fernandez Garcia, Y., Cowan, N., & Della Sala, S. (2008, September). *New long term memory in*

- amnesiacs after an interference-free delay.* Poster presented at the First Meeting of the Federation of the European Societies of Neuropsychology, Edinburgh.
- Chuah, Y.M.L., Cowan, N., Venkatraman, V., Tan, J.-C., & Chee, M.W.L. (2007, November). *The neural mechanisms supporting visual short-term memory for feature conjunctions.* Poster presented at the annual convention of the Society for Neuroscience, San Diego, CA.
- Lee, E.-Y., Cowan, N., Rolan, T., Vogel, E.K., Valle-Inclán, F., & Hackley, S. (2007, October). *Neural mechanisms of visual working memory deficits.* Poster presented at the annual convention of the Society for Psychophysiological Research, Savannah, Georgia.
- Gilchrist, A.L., Cowan, N., & Naveh-Benjamin, M. (2007, November). *A deficit in immediate recall of language in older adults.* Poster at the annual convention of the Psychonomic Society, Longbeach, CA.
- Dewar, M., Della Sala, S. & Cowan, N. (2007, August). *Improving memory consolidation in patients with anterograde amnesia via minimal retroactive interference.* BPS Cognitive Psychology Section XXIV, Annual Conference, University of Aberdeen.
- Cowan, N., Saults, J.S., & Morey, C.C. (2007, August). *Distinguishing central and domain-specific components of working memory.* Talk presented at the Thirteenth Cognitive Science Association for Interdisciplinary Learning (CSAIL), Hood River, Oregon.
- Chen, Z., & Cowan, N. (2007, May). *Three effects of chunking in an immediate free recall task.* Annual Convention of the American Psychological Society, Washington, D.C.
- Dewar, M., Della Sala, S., Cowan, N., & Garcia, Y.F. (2007, July). *Improving memory consolidation in patients with amnesic MCI via Minimal Retroactive Interference.* Joint Meeting of the Psychonomic Society and the Experimental Psychology Society, Edinburgh, U.K.
- Dewar, M., Della Sala, S., Cowan, N., & Garcia, Y.F. (2007, March). *Improving memory consolidation in patients with amnesic MCI via Minimal Retroactive Interference.* 8th Annual Alzheimer's Research Trust Network Conference, Edinburgh, U.K.
- Cowan, N., Morey, C.C., & Saults, J.S. (2007, July). *Advances in understanding central capacity limits in working memory.* Joint Meeting of the Psychonomic Society and the Experimental Psychology Society, Edinburgh, U.K.
- Cowan, N., Morey, C.C., & Saults, J.S. (2007, March). *Developmental clues to working memory processes in a verbal-spatial mapping task.* Poster presented at the biennial meeting of the Society for Research in Child Development, Boston.
- Morey, C.C., & Cowan, N. (2006, November). *People use attention in working memory tasks, but many fail to allocate it.* Poster presented at the annual convention of the Psychonomic Society, Houston, TX.
- Dewar, M., Della Sala, S. & Cowan, N. (2006, November). *"Yes, I remember." Improved delayed recall in anterograde amnesiacs following minimal retroactive interference.* Presentation at the Scottish Neuropsychology Network Scientific Meeting, Glasgow.
- Cowan, N. (2006, July). *When does time allow forgetting? Some speculations.* Paper presented to the Showme Mental State conference, Washington University, St. Louis.
- Chen, Z., & Cowan, N. (2006, May). *Chunk limits and length limits in immediate recall: A reconciliation.* Poster presented at the annual convention of the American Psychological Society, New York.
- Chen Z., & Cowan, N. (2006, April). *A Reconciliation of Capacity Limits and Length Limits in Immediate Recall.* Poster presented at Missouri Life Science Week, University of Missouri, Columbia.
- Morey, C.C. & Cowan, N. (2006, April). *For Working Memory, People Use Attention But Many Fail To Allocate It.* Poster presented at Missouri Life Sciences Week, University of Missouri, Columbia.
- Towse, J.N., Cowan, N., & Horton, N. (2005, November). *When silence speaks louder than words? Using recall dynamics and recall quality to investigate working memory.* Paper presented at the annual convention of the Psychonomic Society, Toronto.
- Morey, C.C., & Cowan, N. (2005, November). *Allocating attention to cross-domain stimuli in working memory.* Poster presented at the annual convention of the Psychonomic Society, Toronto.
- Cowan, N., Chen, D., Morey, C.C., Bunting, M.F., & Saults, J.S. (2005, June). *What is the capacity limit of consciousness awareness?* Paper presented at the annual convention of the Association for the Scientific Study of Consciousness, Pasadena, CA.
- Sussman, E., Winkler, I., Cowan, N., Khan, F.J., & Ellis, M.A. (2005, April). *Electrophysiological evidence for*

- detection and storage of multiple feature patterns in auditory cortex.* Paper presented at the annual convention of the Cognitive Neuroscience Society, New York.
- Bunting, M.F., & Cowan, N. (2004, November). *Working-memory retrieval takes attention: Effects of distraction under time pressure.* Poster presented at the annual meeting of the Psychonomic Society, Minneapolis.
- Morey, C.C., & Cowan, N. (2004, November). *Evidence of cross-domain attention limits in working memory.* Poster presented at the annual meeting of the Psychonomic Society, Minneapolis.
- Colflesh, G.J.H., Bunting, M.F., Cowan, N., & Conway, A.R.A. (2004, May). *Working memory capacity affects how to-be-ignored information is processed.* Poster presented at the annual convention of the American Psychological Society, Chicago.
- Bunting, M., & Cowan, N. (2004, May). *Bye-bye buffers: Temporary storage is (partially) a matter of attention.* Poster presented at the annual convention of the American Psychological Society, Chicago.
- Morey, C.C., & Cowan, N. (2004, May). *When do visual and verbal working-memory tasks conflict?* Poster presented at the annual convention of the American Psychological Society, Chicago.
- Beschin, N., Cowan, N., & Della Sala, S. (2003, May). *Gli effetti dell'interferenza retroattiva in amnesia anterograda possono essere ridotti.* 3° Congresso Nazionale Disabilità Trattamento Integrazione, Padova, Italy.
- Cowan, N., Elliott, E.M., & Saults, J.S. (2003, April). *Development of working memory depends on the measure: Attentional and strategic aspects of working memory.* Paper presented at the biennial convention of the Society for Research in Child Development, Tampa, FL.
- Elliott, E.M., & Cowan, N. (2002, November). *Attentional processes in the disruption of serial recall by irrelevant sounds.* Poster presented at the annual convention of the Psychonomic Society, Kansas City, MO.
- Beschin, N., Cowan, N., & Della Sala, S. (2002, October). *Prose memory in amnesia under very low interference conditions.* Joint meeting of the French and Italian Neuropsychology Societies, Paris. Abstract appears in *Revue Neuropsychologique*.
- Beschin, N., Cowan, N., Della Sala, S., and Perini, M. (2002, September). *Low interference conditions improve amnesia in MCI.* Paper presented to the annual meeting of SIN, the Societa' Italiana di Neurologia, Italian Society of Neurology, Naples. Abstract: *Neurological Sciences*, (2002), 23, S126.
- Cowan, N., Beschin, N., & Della Sala, S. (2002, May). *Just lying there, remembering.* Paper presented at the Showme Mental State conference, Department of Psychology, Washington University.
- Cowan, N., Beschin, N., & Della Sala, S. (2002, July). *Just lying there, remembering: Questioning the boundary between short- and long-term memory on the basis of minimal-interference testing conditions of amnesiacs.* Paper presented at the Quebec'02 Conference on Short-term/Working Memory, Quebec, Canada.
- Elliott, E.M., & Cowan, N. (2002, April). *Don't talk or play music: Multiple mechanisms of short-term memory interference from speech and tones.* Paper presented at the annual convention of the Midwestern Psychological Association, Chicago, IL.
- Cowan, N., Saults, J.S., & Elliott, E.M. (2001, November). *A comparison of auditory and visual working-memory processes.* Paper presented at the annual convention of the Psychonomic Society, Orlando, FL.
- Cowan, N., Towse, J.N., Hamilton, Z., Saults, J.S., & Elliott, E.M. (2001, September). *Timing of processing and recall of a sentence-span task in children.* Poster presented at the 12<sup>th</sup> Conference of the European Society for Cognitive Psychology and the 18<sup>th</sup> Annual Conference of the British Psychological Society, Cognitive Psychology Section (joint meeting), Edinburgh, Scotland, UK.
- Brunner, R., & Cowan, N. (2000, February). *Working Memory: Exploring the nature of capacity limits and the role of unattended measures of capacity.* McNair Scholars Conference, University of Missouri.
- Geer, T., & Cowan, N. (2000, February). *Training children to group items in memory span tasks.* McNair Scholars Conference, University of Missouri.
- Berti, S., Schröger, E., Cowan, N., & Winkler, I. (2000, April). *Aufmerksamkeit und auditorisches Gedächtnisseine EKP-Studie.* Vortrag auf der 42. Tagung experimentell arbeitender Psychologen, Braunschweig. (Germany)
- Rinne, T., Gratton, G., Fabiani, M., Cowan, N., Maclin, E., Stinard, A., Sinkkonen, J., Alho, K., & Naatanen, R. (1999). *Scalp-recorded optical signals elicited by sound processing in the visual cortex.* *Psychophysiology*, 36, S96 (Abstract).

- Conway, A., Cowan, N., Bunting, Therriault, & Minkoff. (1999, November). *Memory capacity, processing speed, and fluid intelligence: Is working memory capacity = Spearman's g?!* Paper presented at the annual convention of the Psychonomic Society, Los Angeles, CA.
- Elliott, E.M., & Cowan, N. (1999, November). *Adaptation to auditory distractors in a cross-modal, color-word interference task.* Paper presented at the annual convention of the Psychonomic Society, Los Angeles, CA.
- Cowan, N. (1999, April). *Different rates of processing develop at different rates.* Paper presented at the Showme Mental State conference, Columbia, MO.
- Cowan, N. (1999, April). *The differential maturation of two processing speeds related to digit span.* Paper presented at the biennial convention of the Society for Research in Child Development, Albuquerque, NM.
- Conway, A.R.A., Cowan, N., & Bunting, M.F. (1998, November). *Working memory capacity and the cocktail party effect: Don't gossip about a low span behind his back.* Paper presented at the annual convention of the Psychonomic Society, Dallas, TX.
- Cowan, N. (1998, June). *Wait a second! The meaning of pauses between words in spoken responses within memory span tasks.* Paper presented at the Showme Conference, Washington University, St. Louis.
- Hulme, C., Newton, P., Cowan, N., Stuart, G., & Brown, G. (1998, June). *The effects of item length and lexicality on short-term memory: A response timing analysis.* Paper presented at the International Conference on Short-term Memory, Quebec, Canada.
- Elliott, E.M., & Cowan, N. (1998, April). *The resilience of cross-modal Stroop-like interference.* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.
- Cowan, N., Nugent, L.D., Elliott, E.M., Ponomarev, I., & Saults, J.S. (1998, June). *Working memory span for ignored digits.* Paper presented at the International Conference on Short-term Memory, Quebec, Canada.
- Gomes, H., Sussman, E., Ritter, W., Kurtzberg, D., Cowan, N., & Vaughan, H. G., Jr. (1996, November). *Developmental changes in an electrophysiological measure of short term memory.* Paper presented to the Society for Neuroscience, Washington, D.C..
- Wood, N.L., Stadler, M.A., & Cowan, N. (1995, November). *Memory without attention in Eich's (1984) procedure? Not so fast!* Paper presented at the annual convention of the Psychonomic Society, Los Angeles, CA.
- Wood, N., & Cowan, N. (1995, May). *Direct and indirect tests of information in attended versus ignored auditory channels.* Paper presented at the annual convention of the Midwestern Psychological Association, Chicago, IL.
- Cowan, N., Wood, N.L., & Keller, T.A. (1995, April). *Why is speaking rate correlated with memory span?* Paper presented at the biennial convention of the Society for Research in Child Development, Indianapolis.
- Cowan, N., Keller, T., Hulme, C., Roodenrys, S., McDougall, S., & Rack, J. (1994, July). *Response timing clues to the mechanisms of age and word length effects on memory span.* Paper presented at the International Conference on Working Memory, Magdalene College, Cambridge, U.K.
- Keller, T.A., Cowan, N. (1994, May). *Can auditory sensory information be rehearsed?* Paper presented at the annual convention of the Midwestern Psychological Association, Chicago.
- Wood, N., & Cowan, N. (1994, May). *Moray revisited: Attention shifts to one's name in an ignored auditory channel.* Paper presented at the annual convention of the Midwestern Psychological Association, Chicago.
- Winkler, I., Cowan, N., Csépe, V., Czigler, I., Teder, W., & Näätänen, R. (1993, October). *Deactivation and reactivation of auditory sensory memory traces as reflected by the mismatch negativity ERP component.* Paper presented at the annual meeting of the Society for Research in Psychophysiology, Rotach-Egern, Germany.
- Saults, J.S., & Cowan, N. (1993, March). *Development of memory for unattended spoken words.* Paper presented at the biennial convention of the Society for Research in Child Development, New Orleans, LA.
- Keller, T.A., & Cowan, N. (1993, March). *Developmental increase in the duration of auditory memory for tones.* Paper presented at the biennial convention of the Society for Research in Child Development, New Orleans, LA.
- Wood, N., & Cowan, N. (1992, November). *Attention shifts to a subtle physical change during selective listening.* Paper presented at the annual convention of the Psychonomic Society, St. Louis, MO.
- Day, L., & Cowan, N. (1992, November). *The absence of phonological similarity effects in phonologically disordered children.* Paper presented at the annual convention of the American Speech-Language Hearing

- Association (ASHA), San Antonio, TX.
- Gillam, R., Cowan, N., & Day, L. (1992, November). *Memory functions in specifically language impaired and normally-achieving children*. Paper presented at the annual convention of the American Speech-Language Hearing Association (ASHA), San Antonio, TX.
- Cowan, N., & Leavitt, L.A. (1990, April). *Speakers' access to the phonological structure of the syllable in word games*. Paper presented at the 26th regional meeting of the Chicago Linguistic Society, parasession on the Syllable in Phonetics and Phonology, Chicago, IL.
- Cowan, N., Day, L., Saults, J.S., Flores, L., Johnson, T., & Keller, T. (1991, July). *Output delay effects on serial recall*. Paper presented at the International Conference on Memory, University of Lancaster, Lancaster, England, U.K.
- Cowan, N., Keller, T.A., & Saults, J.S. (1989, November). *Does silent strategic processing affect echoic memory?* Paper presented at the annual convention of the Psychonomic Society, Atlanta, GA.
- Cowan, N., Lichty, W., & Grove, T. (1987, August). *Memory for unattended speech during silent reading*. Paper presented to the Second International Conference on Practical Aspects of Memory, Swansea, Wales, U.K.
- Cowan, N., & Leavitt, L. A. (1987, July). *Children who can talk backward: 5 years later*. Paper presented at the Fourth International Congress for the Study of Child Language, Lund, Sweden.
- Cowan, N., Cartwright, C., Winterowd, C., & Sherk, M. (1987, April). *A bridge between the speech memory systems of young children and adults*. Paper presented at the biennial meeting of the Society for Research in Child Development, Baltimore, MD.
- Cowan, N. (1986, November). *Evidence of structure within the vowel system in speech memory*. Paper presented at the annual convention of the Psychonomic Society, New Orleans, LA.
- Cowan, N. (1985, November). *Quantitative aspects of auditory sensory storage, integration, and processing*. Paper presented at the annual convention of the Psychonomic Society, Boston, MA.
- Cowan, N., Daly, T., & Kielbasa, L. A. (1985, April). *Temporal properties of echoic memory in preschool children*. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto, Ontario, Canada.
- Cowan, N., & Cowan, P. R. (1983, November). *Auditory memory across 20 seconds in preschool children*. Paper presented at the annual convention of the Psychonomic Society, San Diego, CA.
- Cowan, N., Tamis-Le Monda, C., & Braine, M. D. S. (1983, April). *Children's knowledge of semantic categories implied but not stated*. Paper presented at the biennial convention of the Society for Research in Child Development, Detroit, MI.
- Cowan, N., & Leavitt, L. A. (1982, November). *Natural algorithms for language play*. Paper presented at the annual convention of the Psychonomic Society, Minneapolis, MN.
- Cowan, N., Suomi, K., & Morse, P. A. (1982, March). *Temporal properties of echoic storage in infancy*. Paper presented at the International Conference on Infant Studies, Austin, TX.
- Petrovich-Bartell, N., Cowan, N., & Morse, P. A. (1981, August). *Perceptual and acoustic attributes of infant distress vocalizations*. Paper presented at the Second International Congress for the Study of Child Language, Vancouver, British Columbia.
- Cowan, N., & Leavitt, L. A. (1981, August). *Talking backward: Speech play in late childhood*. Paper presented at the Second International Congress for the study of Child Language, Vancouver, British Columbia.
- Cowan, N. (1981, August). *Toward an understanding of morphological segmentation*. Paper presented at the annual convention of the American Psychological Association, Los Angeles, CA.
- Cowan, N., & Leavitt, L. A. (1981, May). *Juggling acts with linguistic units*. Paper presented at the annual convention of the Chicago Linguistic Society, IL.
- Cowan, N., Suomi, K., & Morse, P. A. (1981, April). *Echoic storage in infant perception*. Paper presented at the biennial convention of the Society for Research in Child Development, Boston, MA.
- Goodsitt, J., Morse, P. A., Cowan, N., & Ver Hoeve, J. N. (1981, April). *Infant speech perception in a multisyllabic world*. Paper presented at the biennial convention of the Society for Research in Child Development, Boston, MA.
- Cowan, N., Leavitt, L. A., Massaro, D. W., & Kent, R. D. (1980, April). *Speaking backwards: A case study*. Paper presented at the annual convention of the Acoustical Society of America, Atlanta, GA.

Cowan, N., & Morse, P. A. (1979, June). *Influence of task demands on the categorical versus continuous perception of vowels*. Paper presented at the annual convention of the Acoustical Society of America, Boston, MA.

### **University Service:**

#### *University of Massachusetts*

Member, Graduate Affairs Committee, Department of Psychology

#### *University of Missouri*

Director, Cognition & Neuroscience Training Area (2005-2007)

Director, Experimental Training Area (1994 - 1996)

Chair, neuroscience symposium committee (2005)

Chair, Departmental Human Subjects Committee (9/86-9/90 & 9/91-9/92)

Chair, Arts & Science Human Subjects Committee (9/86-9/90)

Chair, Search Committee in Developmental Psychology (1988-89)

Chair, Search Committee in Experimental Psychology (1991-92)

Chair, Search Committee in Cognitive Neuroscience (1997-98)

Chair, 2 faculty members' Promotion & Tenure Committees (1992-94)

Chair, 3 faculty member's promotion to Full Professor (1995- 2003)

Chair, Space Committee (1992-1993)

Chair, Centennial Celebration, Part I (1998)

Member, Experimental Training Committee (1985-2000)

Member, Cognition and Neuroscience Training Committee (2000 - present)

Member, Search Committee in Cognitive Neuropsychology (1986-87)

Member, Search Committee in Experimental Psychology (1987-88)

Member, Departmental Long Range Planning Committees (10/87-5/90)

Member, Personnel Committee (1989 - present)

Member, Departmental Chair Evaluation Committee (1992-93)

Member, Committee for the Curriculum on Undergraduate Education (1994-1996)

Member, Departmental Self-study Committee (1990, 1995)

Member, Arts & Science Faculty Awards Committees (1997-1999; 2003)

Member, Foreign Travel Committee, University of Missouri (1998-99)

Co-Chair, Cognitive Neuroscience Senior Search (1994-95)

Acting Associate Chair, Department of Psychology (Winter, 1994)

Member, History and Future Directions Committee (1996-97)

Member, MU Presidential Award for Research and Creativity (1999)

Elected Member, Faculty Council, University of Missouri (2000-2002)

Elected Member, Advisory Committee, Department of Psychological Sciences (2001-02)

Elected Member, Executive Committee, College of Arts & Science, University of Missouri (2012-2015)

### **Media:**

Discussion of my research in various print formats including among others *Science*, *Scientific American*, *Scientific American Mind*, *USA Today*, *Washington Post*, United Press International, LiveScience, ScienceDaily, Science News, *Asahi Shimbun* (Japan), *Times of*

*India, The Psychologist (UK), APS Observer, Seattle Post, Toronto Globe & Mail, Glamour Magazine; Radio & Television including among others Morning Show, WAQY-FM, Hartford, CT; Canadian Broadcasting Company, Radio News Service, RMF FM Poland, KOMU TV, KIBA radio, Corus Radio Network (Canada), British Broadcasting Company*

**Teaching Experience:**

*University of Wisconsin-Madison*  
(Assistantships including discussion or laboratory sections)

Introductory Psychology  
Experimental Psychology  
Developmental Psychology

*New York University*

Developmental Psychology

*University of Massachusetts at Amherst*

Applied and Basic Cognitive Development (Graduate Level, team taught)  
Auditory Perception Seminar  
Child Behavior and Development  
Independent Readings in Developmental Psychology  
Language Development Seminar  
Perceptual Development Seminar  
Psychology as a Natural Science  
Seminar in Developmental Psychology

*University of Missouri*

Advanced Seminar in Information Processing  
Cognitive Psychology (both graduate and undergraduate versions)  
Human Senses (laboratory course)  
Perception  
Perception and Thought  
Research Methods  
Research Seminar in Experimental Psychology  
Seminar in Cognitive Development  
Seminar in Working Memory  
Seminar in Memory & Attention  
Discussion leader for Ethical Conduct of Research (Biochemistry Dept.)

**Mentoring Activity**

*Doctoral Students and Their Current Positions*

J. Scott Saults, Ph.D., 1992 (Graduate Student Excellence Award)  
Research Associate, University of Missouri

Timothy A. Keller, Ph.D., 1994

Senior Research Associate, Carnegie Mellon University

Linda S. Day, Ph.D., 1995

Assistant Professor, Communication Sciences and Disorders, University of Missouri

Noelle Wood, Ph.D., 1996

Project Manager, Rhode Island Department of Mental Health

Emily M. Elliott, Ph.D., 2001

Associate Professor, Louisiana State University

Anna Hismjatullina, Ph.D., 2006

Applied Behavior Consultant, California

Candice C. Morey, Ph.D., 2007.

(Sponsored predoctoral NRSA; In 2008, one of 2 winners of the Outstanding Ph.D. Dissertation Award at the University of Missouri.)  
Assistant Professor, University of Groningen, Netherlands

Zhijian (David) Chen, Ph.D., 2009

Postdoctoral Fellow, University of Toronto

Amanda L. Gilchrist, Ph.D., 2011

(Graduate Student Excellence Awards from the Department of Psychological Sciences and from Life Sciences. In 2011, winner of award for best dissertation on campus.)  
Postdoctoral Fellow, Georgia Institute of Technology

Timothy J. Ricker, M.A.

(Sponsored predoctoral NRSA, NIMH, 2011)

*Postdoctoral Fellows and Their Current Positions*

Emily Elliott (2001-2002)

Associate Professor, Louisiana State University

Michael Bunting (2003-2005)

Area Director, Cognitive Psychology, Center for the Advanced Study of Language, University of Maryland, College Park, MD.  
(Winner of APA's 2006 Young Investigator Award for the *Journal of Experimental Psychology: Learning, Memory, and Cognition*)

Tina Miyake (2007-2009)

Supervision shared with Jeff Rouder and Moshe Naveh-Benjamin

Amanda L. Gilchrist, (2011)

Now Postdoctoral Fellow, Georgia Institute of Technology

*Extramural Committee Member*

Opponent, Doctoral Defense of István Winkler, University of Helsinki, Finland, June 2, 1993.

Reader, Doctoral Defense of Patrick Wilken, University of Melbourne, Australia, 2001

Committee Member, Habilitation of Valérie Camos, University of Bourgogne, Dijon, France, December 19, 2003

Committee Member, Doctoral Defense of Evie Vergauwe, University of Geneva, Switzerland, June 2010

(+Several others)