

CURRICULUM VITAE

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Education

1979-1985 Ph.D. Department of Psychology, University of Texas at Austin.
1976-1979 B.A., Psychology, Hebrew University, Jerusalem, Israel.

Continuing Education

May 1984 "Clinical Use of Evoked Potentials" Harvard Medical School Workshop.
July 1988 Summer Institute on Research in Aging, sponsored by the National Institute on Aging and Brookdale Foundation, Airlie House, Warrenton, VA.
June-July 1989 Summer Institute on Cognitive Neuroscience, sponsored by Dartmouth University Department of Psychiatry and McDonnell Foundation, Hanover, NH.
June 1999 Visiting Fellowship Program in Functional MRI at Massachusetts General Hospital.

Professional Experience

1983 – 1985 Assistant Instructor, Department of Psychology, University of Texas at Austin.
1985 – 1989 Assistant Professor, Department of Psychology, University of Health Sciences / Chicago Medical School.
1989 – 1991 Assistant Professor, Department of Psychology, Memphis State University, Memphis, Tenn.
1991 – 1999 Associate Professor, Department of Psychology, The University of Memphis (formerly Memphis State University), Memphis, Tenn.
1999 – 2001 Professor, Department of Psychology, The University of Memphis
1999 - 2000 Meyerhoff Visiting Professor of Neurobiology, Weizmann Institute of Science, Rehovot, Israel.
2001 - Professor of Gerontology and Psychology, Associate Director for Life-Span Cognitive Neuroscience, Institute of Gerontology, Wayne State University, Detroit, Michigan.
2006, 2007,(June-Aug) Visiting Scientist, Max Planck Institute for Human Development, Berlin, Germany.

Current Funding

Principal Investigator:

National Institute on Aging, grant 2R37AG011230 Neural Correlates and Modifiers of Cognitive Aging. Funding period: 7/1/05-6/30/10, direct costs: \$2,090,389, a MERIT award.

National Institute on Aging, grant R03-AG024630 "Hemodynamic predictors of brain and cognitive aging." \$117,000 direct costs, funding period September 15, 2004 – June 30, 2007

Co-Investigator

National Institute of Aging grant R01-AG18008 "Aging, fitness and neurocognitive function" (A.F. Kramer, University of Illinois, PI) Funding period 3/1/02-2/28/05

Membership in Professional Organizations

- American Association for Advancement of Science
- Psychonomic Society

- Cognitive Neuroscience Society
- Society for Neuroscience
- Memory Disorders Research Society
- Organization for Human Brain Mapping

Editorial Work

- Editorial board member: *Psychology and Aging*, 1999-.
- Editorial board member *Neuropsychology*, 2007-
- National Institute on Aging, member of the Human Aging and Development (HUD-2) study section (1995-1999).
- Special review panel member: National Institute on Aging, National Institute of Alcoholism and Alcohol Abuse, National Institute on Aging (1996-current).

Consulting

- Advisory Board Member and Senior Faculty Fellow for the Center for Applied Cognitive Research on Aging (funded by the National Institute on Aging, Prof. Denise Park, PI), University of Georgia and University of Michigan (1992-1998).
- Consultant on Grant SEJ2004-21243-E Deterioro Cognitivo Y Sensorial En El Envejecimiento Y En Las Enfermedades Neurodegenerativas [Cognitive and Sensory Decline in Aging and Neurodegenerative Disorders], PI: Prof. Ana Garriga Trillo, Universidad Nacional De Educacion A Distancia, Madrid, Spain.
- Consultant on NIH grant “Midlife Cognitive Change and Risk of Cognitive Decline” at Penn State University (S. Willis, PI)
- Consultant on Swedish Neuroscience of Aging Consortium (SNAC), PI: Prof. Lars-Olof Wahlund, Karolinska Institute and Huddinge Hospital, Stockholm, Sweden.
- Member of Advisory Committee for Advanced Center for Interventions and Services Research for Late-Life Mood Disorders (ACISR/LLMD) at the University of Pittsburgh
- Consultant on Canadian Institute of Health Research proposed project, *Elucidating the Profile and Mechanisms of Cognitive Decline in Persons Ageing with Schizophrenia* (King, Christensen, Zipursky, and Kabani Co-PIs).
- Consultant on a proposed study: “Cognitive Benefits of Cardiac Rehabilitation in Heart Failure.” At Kent State University (J. Gunstad, PI).

Courses Taught

Undergraduate

- Abnormal Psychology
- Physiological Psychology
- Introduction to Psychology

Graduate

- Cognitive Foundations of Neuropsychology
- Neuropathology and Behavior
- Cognitive Aging
- Cognitive Neuroscience
- Advanced Statistics: Multivariate Methods
- Introduction to Neuropsychology
- Functional Neuroanatomy (with dissection lab)

Publications

Raz, N., Willerman, L., Ingmundson, P., & Hanlon, M. (1983). Aptitude-related differences in auditory backward recognition masking. *Intelligence*, 7, 71-90.

August, G.J., Raz, N., Papanicolaou, A.C., Davis-Baird, T., Hirsh, S., & Hsu, L. (1984). Fenfluramine treatment of infantile autism: Electrophysiological, neurochemical, and behavioral effects. *Journal of Nervous and Mental Disease*, 172, 604-612.

- Raz, N. & Willerman, L. (1985). Aptitude-related differences in auditory information processing: Effects of selective attention and target duration. *Personality and Individual Differences*, 6, 299-304.
- August, J.G., Raz, N., & Davis-Baird, T. (1985). Effects of fenfluramine on behavioral and attentional variables in infantile autism. *Journal of Autism and Developmental Disorders*, 15, 97-107.
- Papanicolaou, A.C., Loring, D.W., Raz, N., & Eisenberg, H. (1985). Relationship between stimulus intensity and the P300. *Psychophysiology*, 22, 326-329.
- Papanicolaou, A.C., Raz, N., Loring, D.W., & Eisenberg, H.M. (1986). Brainstem evoked response suppression during speech production. *Brain and Language*, 27, 50-55.
- Papanicolaou, A.C., Loring, D.W., Eisenberg, H.M., Raz, N., & Contreras, F. (1986). Auditory brainstem evoked responses in comatose head-injured patients. *Neurosurgery*, 18, 173-175.
- Yeo, R.A., Turkheimer, E.N., Raz, N., & Bigler, E.D. (1987). Volumetric parameters of normal human brain: intellectual correlates. *Brain and Cognition*, 6, 15-23.
- Raz, N., Willerman, L., & Yama, M. (1987). On sense and senses: Intelligence and auditory information processing. *Personality and Individual Differences*, 8, 201-210.
- August, G.J., Raz, N., & Baird, T.D. (1987). Fenfluramine response in high- and low-functioning autistic children. *Journal of American Academy of Child and Adolescent Psychiatry*, 26, 342-346.
- Pritchard, W.S., Raz, N., & August, G.J. (1987). Visual augmenting/reducing and P300 in autistic children. *Journal of Autism and Developmental Disorders*, 17, 231-242.
- Pritchard, W.S., Raz, N., & August, G.J. (1987). Brief report: No effect of chronic fenfluramine on P300 component of the event-related potentials. *International Journal of Neuroscience*, 35, 105-110.
- Raz, N., Raz, S., Yeo, R.A., Turkheimer, E., Bigler, E.D., & Cullum, C.M. (1987). Relationship between cognitive and morphological asymmetries in Alzheimer's dementia: A CT study. *International Journal of Neuroscience*, 35, 235-243.
- Raz, S., Raz, N., Weinberger, D.R., Boronow, T., Pickar, D., Bigler, E.D., & Turkheimer, E.N. (1987). Morphological brain abnormalities in schizophrenia determined by computerized tomography: A problem of measurement? *Psychiatry Research*, 22, 91-98.
- Raz, N., Pritchard, W.S., & August, G.J. (1987). Effects of fenfluramine on EEG power and brain stem evoked response (BSER) in infantile autism. *Neuropsychobiology*, 18, 105-109.
- Raz, S., Raz, N., & Bigler, E.D. (1988). Ventriculomegaly in schizophrenia: Is the choice of controls important? *Psychiatry Research*, 24, 71-77.
- Raz, N., Raz, S., & Bigler, E.D. (1988). Ventriculomegaly in schizophrenia, the role of control group, and the perils of dichotomous thinking. *Psychiatry Research*, 26, 245-248 [letter].
- Raz, N., Millman, D., & Moberg, P.J. (1989). Auditory memory and age-related differences in two-tone frequency discrimination: Trace decay and interference. *Experimental Aging Research*, 15, 43-49.
- Raz, S., & Raz, N. (1990). Structural brain abnormalities in the major psychoses: A quantitative review of the evidence from computerized imaging. *Psychological Bulletin*, 108, 93-108.
- Raz, N., Millman, D. & Sarpel, G. (1990). Cerebral correlates of cognitive aging: Grey-white matter differentiation in the medial temporal lobes, and fluid vs. crystallized abilities. *Psychobiology*, 18, 475-481.
- Raz, N., Millman, D., & Moberg, P.J. (1990). On mechanisms of age-related differences in frequency discrimination with backward masking: Speed of processing versus stimulus persistence. *Psychology and Aging*, 5, 475-481.
- Raz, N., Millman, D., & Moberg, P.J. (1990). Effects of age and age-related differences in auditory information processing on fluid and crystallized intelligence. *Personality and Individual Differences*, 11, 1147-1152.
- Raz, N., Torres, I.J., Spencer, W.D., White, K., Acker, J.D. (1992). Age-related regional differences in cerebellar vermis observed *in vivo*. *Archives of Neurology*, 49, 412-416.

Raz, N., Torres, I.J., & Acker, J.D. (1992). Age-related shrinkage of the mamillary bodies: Evidence from *in vivo* MRI. *NeuroReport*, *3*, 713-716.

Raz, N., Torres, I.J., Spencer, W.D., Baertschi, J.C., Millman, D., Sarpel, G. (1993) Neuroanatomical correlates of age-sensitive and age-invariant cognitive abilities: An *in vivo* MRI investigation. *Intelligence*, *17*, 407-421.

Raz, N., Torres, I.J., Spencer, W.D., & Acker, J.D. (1993) Pathoclysis in aging human cerebral cortex: Evidence from *in vivo* MRI morphometry. *Psychobiology*, *21*, 151-160.

Spencer, W.D. & Raz, N. (1994) Remembering facts, source, and context: Can frontal dysfunction explain adult age differences? *Psychology and Aging*, *9*, 149-159.

Torres, I.J. & Raz, N. (1994) Towards the neural basis of verbal priming: A Cognitive-neuropsychological synthesis. *Neuropsychology Review*, *4*, 1-30.

DiGiulio, D.V., Seidenberg, M.S., O'Leary, D.S., & Raz, N. (1994). Procedural and declarative memory: A Developmental study. *Brain and Cognition*, *25*, 79-91.

Raz, N., Torres, I., & Acker, J.D. (1995). Age, gender, and hemispheric differences in human striatum: A Quantitative review and new data from *in vivo* MRI morphometry. *Neurobiology of Learning and Memory*, *63*, 133-142.

Raz, N., Torres, I.J., Briggs, S.D., Spencer, W.D., Thornton, A.E., Loken, W., Gunning, F.M., McQuain, J.D., Driesen, N.R., & Acker, J.D. (1995). Selective neuroanatomical abnormalities in Down's syndrome and their cognitive correlates: Evidence from MRI morphometry. *Neurology*, *45*, 356-366.

Driesen, N.R. & Raz, N. (1995). Sex-, age-, and handedness-related differences in human corpus callosum observed *in vivo*. *Psychobiology*, *23*, 240-247.

Spencer, W.D. & Raz, N. (1995). Differential age effects on memory for content and context: A meta-analysis. *Psychology and Aging*, *10*, 527-539.

Dulaney, C., Raz, N., & Devine, C. (1996). Automatic and effortful processes in Down syndrome and nonspecific mental retardation. *American Journal of Mental Retardation*, *100*, 418-423.

Raz, N., Gunning, F.M., Head, D., Dupuis, J.H., McQuain, J.M., Briggs, S.D., Thornton, A.E., Loken, W.J. & Acker, J.D. (1997). Selective aging of human cerebral cortex observed *in vivo*: Differential vulnerability of the prefrontal gray matter. *Cerebral Cortex*, *7*, 268-282.

Raz, N. (1997). [invited comment on Luft et al], *American Journal of Neuroradiology*, *18*, 594-595.

Moberg, P.A. & Raz, N. (1997). Aging and olfactory recognition memory: Effect of encoding strategies and cognitive abilities. *International Journal of Neuroscience*, *90*, 277-292.

Thornton, A.E. & Raz, N. (1997). Memory in multiple sclerosis: A quantitative review. *Neuropsychology*, *11*, 357-366.

Raz, N., Dupuis, J.H., Briggs, S.D., McGavran, C., & Acker, J.D. (1998). Differential effects of age and sex on the cerebellar hemispheres and the vermis: A prospective MR study. *American Journal of Neuroradiology*, *19*, 65-71.

Raz, N., Dixon, F.M., Head, D. P., Dupuis, J.H., & Acker, J.D. (1998). Neuroanatomical correlates of cognitive aging: Evidence from structural MRI. *Neuropsychology*, *12*, 95-106.

Gunning-Dixon, F.M., Head, D.P., McQuain, J.M., Acker, J.D., & Raz, N. (1998). Differential aging of the human striatum: A prospective MR study. *American Journal of Neuroradiology*, *19*, 1501-1507.

Briggs, S.D., Raz, N., & Marks, W. (1999). Age-related deficits in generation and manipulation of mental images: I. The role of sensorimotor speed and working memory. *Psychology and Aging*, *14*, 427-435

Raz, N., Briggs, S.D., Marks, W., & Acker, J.D. (1999). Age-related deficits in generation and manipulation of mental images: II. The role of dorsolateral prefrontal cortex. *Psychology and Aging*, *14*, 436-445.

- Gunning-Dixon, F.M., & Raz, N. (2000). The cognitive correlates of white matter abnormalities in normal aging: A quantitative review. *Neuropsychology*, *14*, 224-232.
- Raz, N., Williamson, A., Gunning-Dixon, F., Head, D., & Acker, J.D. (2000). Neuroanatomical and cognitive correlates of adult age differences in acquisition of a perceptual-motor skill. *Microscopy Research and Technique, a special issue on Neuroimaging and Memory*, *51*, 85-93.
- Raz, N., Gunning-Dixon, F., Head, D., Williamson, A., & Acker, J.D. (2001). Age and sex differences in the cerebellum and the ventral pons: A Prospective MR study of healthy adults. *American Journal of Neuroradiology*, *22*, 1161-1167.
- Head, D., Raz, N., Gunning-Dixon, F., Williamson, A., & Acker, J.D. (2002). Age-related shrinkage of the prefrontal cortex is associated with executive, but not procedural aspects of cognitive performance. *Psychology and Aging*, *17*, 72-84.
- Thornton, A.E., Raz, N., & Tucker, K.A. (2002). Memory in multiple sclerosis: Contextual encoding deficits. *Journal of the International Neuropsychological Society*, *8*:395-409.
- Colcombe S, Erickson KI, Raz N, Webb AG, Cohen NJ, McAuley E, et al. (2003). Aerobic fitness reduces brain tissue loss in aging humans. *Journal of Gerontology, A: Biological Sciences and Medical Sciences*, *58A*, 176–180.
- Raz, N., Rodrigue, KM., Kennedy, KM, Dahle, C., Head, D, Acker, JD (2003). Differential age-related changes in the regional metencephalic volumes in humans: A five-year follow-up. *Neuroscience Letters*, *349*, 163-166.
- Korman, M., Raz, N., Flash, T., & Karni, A. (2003). Multiple shifts in the representation of a motor sequence during the acquisition of skilled performance. *Proceedings of the National Academy of Science USA*, *100*, 12492-12497.
- Gunning-Dixon, F.M., & Raz, N. (2003). Neuroanatomical correlates of selected executive functions in middle-aged and older adults: A prospective MRI study. *Neuropsychologia*, *41*, 1929-1941.
- Raz, N, Rodrigue, KM, Kennedy, KM, Head, D., Gunning-Dixon, FM, Acker JD. (2003). Differential aging of the human striatum: Longitudinal evidence. *American Journal of Neuroradiology*, *24*, 1849-1856.
- Raz, N., Rodrigue, KM, & Acker, JD (2003). Hypertension and the brain: Vulnerability of the prefrontal regions and executive functions. *Behavioral Neuroscience*, *17*, 1169-1180.
- Raz, N., Gunning-Dixon, F., Head, D., Williamson, A., Rodrigue, K., Acker, J.D. (2004). Aging, sexual dimorphism, and hemispheric asymmetry of the cerebral cortex: Replicability of regional differences in volume. *Neurobiology of Aging*, *25*, 377-396.
- Raz, N, Rodrigue, KM, Head, D., Kennedy, KM, Acker JD. (2004). Differential aging of the medial temporal lobe: A study of a five-year change. *Neurology*, *62*, 433-439.
- Rodrigue, KM & Raz, N. (2004). Shrinkage of the entorhinal cortex over five years predicts memory performance in healthy adults. *The Journal of Neuroscience*, *24*, 956–963.
- Raz, N., Rodrigue, KM, Kennedy, KM, & Acker, J.D. (2004). Hormone replacement therapy and age-related brain shrinkage: regional effects. *NeuroReport*, *15*, 2531-2534.
- Erickson, KI, Colcombe, SJ, Raz, N., Korol, DL., Scalf, P., Webb, A., Cohen, NJ, McAuley, E., Kramer, AF.(2005). Selective sparing of brain tissue in postmenopausal women receiving hormone replacement therapy. *Neurobiology of Aging*, *26*, 1205-1213.
- Kennedy, KM, & Raz, N. (2005). Age, sex, and regional brain volumes predict perceptual-motor skill acquisition. *Cortex*, *41*, 560-569.
- Rodrigue, K.M., Kennedy, KM, & Raz, N. (2005). Aging and longitudinal change in perceptual-motor skill acquisition in healthy adults. *Journal of Gerontology: Psychological Sciences*, *60B*, P174-181.
- Raz, N., Lindenberger, U., Rodrigue, K.M., Kennedy, K.M., Head, D, Williamson, A., Dahle, C., Gerstorff, D., & Acker, J.D. (2005). Regional brain changes in aging healthy adults: General trends, individual differences, and modifiers. *Cerebral Cortex*, *15*, 1676-1689.

- Thornton, W.J.L & Raz, N. (2006). Aging and the role of working memory resources in visuospatial attention. *Aging, Neuropsychology, and Cognition*, 13, 36–61.
- Moffat SD, Kennedy KM, Rodrigue KM, Raz N. (2006). Extrahippocampal contributions to age differences in human spatial navigation. *Cerebral Cortex*, Jul 20; [Epub ahead of print]
- Raz N, Rodrigue KM (2006). Differential aging of the brain: Patterns, cognitive correlates and modifiers. *Neuroscience and Biobehavioral Reviews*, 30:730-748. Epub 2006 Aug 17.
- Kennedy, K. M., Rodrigue, K. M., & Raz, N. (2006). Fragmented pictures revisited: Long-term changes in repetition priming, relation to skill learning, and the role of cognitive resources. *Gerontology*, 53, 148-158.
- Raz, N., Rodrigue, K. M. , & Haacke, E.M. (2007). Brain aging and its modifiers: Insights from *in vivo* neuromorphometry and Susceptibility Weighted Imaging. *Annals of New York Academy of Science*, 1097, 84-93.
- Raz, N., Rodrigue, K.M., Kennedy, K.M., & Acker, J.D. (2007). Vascular health and longitudinal changes in brain and cognition in middle-aged and older adults. *Neuropsychology*, 21, 149-157.
- Kennedy, K.M., Partridge, T., & Raz, N. (2007). Age-related differences in acquisition of perceptual-motor skills: Working memory as a mediator. *Aging, Neuropsychology, and Cognition*, in press.
- Raz, N., Lindenberger, U., Ghisletta, P., Rodrigue, K.M., Kennedy, K.M., & Acker, J.D. (2007). Neuroanatomical correlates of fluid intelligence in healthy adults and persons with vascular risk factors. *Cerebral Cortex*, 2007 Jul 5; [Epub ahead of print]
- Raz, N. (2007). Which side of plasticity? A comment on Greenwood. *Neuropsychology*, 21, 676-677.
- Kennedy, KM, Erickson, KI, Rodrigue, KM, Voss, MW, Colcombe, SJ, Kramer, AF, Acker, JD, & Raz, N. Age-related differences in regional brain volumes: A Comparison of manual volumetry with optimized Voxel-Based Morphometry, *Neurobiology of Aging*, in press.
- Kennedy, K.M., Hope, K., & Raz, N. Lifespan adult faces: Norms for age, familiarity, memorability, mood, and picture quality. *Experimental Aging Research*, in press
- Head, D., Rodrigue, K.M., Kennedy, K.M., & Raz, N. Neuroanatomical and cognitive mediators of age-related differences in episodic memory. In revision.
- Taconnat, L., Raz, N., Toczé, C., Bouazzaoui, B., Sauzéon, H., Fay, S., & Isingrini, M. Aging and organization strategies in free recall: the role of cognitive flexibility. Submitted.
- Kennedy, K.M., Rodrigue, K.M., & Raz, N. Reduced perceptual priming, but not perceptual learning is associated with smaller visual cortex in healthy adults. Submitted.

Book Chapters

- Raz, N. (1994). Psychophysical measures of intelligence. In: Sternberg, R.J. (Ed.) *Encyclopedia of Intelligence*. New York: Macmillan.
- Raz, N. (1996). Neuroanatomy of aging brain: Evidence from structural MRI. In: Bigler, E.D. (ed.) *Neuroimaging II: Clinical Applications*, New York: Academic Press (pp.153-182).
- Raz, N. (2000). Aging of the brain and its impact on cognitive performance: Integration of structural and functional findings. In: F.I.M. Craik and T.A. Salthouse (Eds.) *Handbook of Aging and Cognition - II*. (Pp.1-90). Mahwah, NJ: Erlbaum.
- Raz, N. (October 2000) Ageing and the Brain. In: *Encyclopedia of Life Sciences*, London: Nature Publishing Group, <http://www.els.net/doi:10.1038/npg.els.0003375>
- Raz, N. (2002). Cognitive aging. In: V. S. Ramachandran (Ed.) *The Encyclopedia of the Human Brain*. San Diego, CA: Academic Press
- Raz, N. (2004). The aging brain: Structural changes and their implications for cognitive aging. In Dixon, R, Bäckman, L., & Nilsson, L.-G. (Eds.) *New Frontiers in Cognitive Aging*. Oxford University Press, pp. 115-134.
- Raz, N. (2004). The aging brain observed in vivo: Differential changes and their modifiers. In R. Cabeza, L. Nyberg, & D. C. Park (Eds.), *Cognitive Neuroscience of Aging: Linking Cognitive and Cerebral Aging*. New York: Oxford University Press, pp.17-55.

Raz, N (2005). Age-related differences and age-related changes in brain structure and their impact on cognition. In: Taconnat, L., Clarys, D., Vanneste, S., & Isingrini, M. (eds.) *Manifestations cognitives du vieillissement psychologique. Actes des VII^{èmes} Journées du Vieillissement Cognitif*, Publibook Université: Paris, France, pp. 21-46.

Raz, N. (July 2005) Ageing and the Brain. In: *Encyclopedia of Life Sciences*. John Wiley & Sons, Ltd: Chichester <http://www.els.net/> [doi:10.1038/npg.els.0004063].

Raz, N. (2006). Societal factors in cognitive aging: One eye wide shut? In: Schaie, K. W. and Carstensen, L.L. (eds.) *Social Structures, Aging, and Self-Regulation in the Elderly*, New York, NY: Springer.

Raz, N. & Nagel, I.E. (2007). Der Einfluss des Hirnalterungsprozesses auf die Kognition – eine Integration struktureller und funktioneller Forschungsergebnisse. In: J. Brandtstädter & U. Lindenberger (Eds.), *Entwicklungspsychologie der Lebensspanne. Ein Lehrbuch*. Stuttgart: Kohlhammer.

Raz, N. (2008). Structural brain aging and its modifiers. In Garriga-Trillo, A. (ed.) *Converging research on predictors of cognitive impairment and neurodegenerative Diseases*.

Raz, N. & Kennedy, K.M. (2008). A Systems Approach to Age-Related Change: Neuroanatomic Changes, Their Modifiers, and Cognitive Correlates. In: W.Jagust, & M. D'Esposito. *Imaging the Aging Brain*. (Eds.) New York, NY: Oxford University Press, pp.

Edited Books

Raz, N. (Ed.) (1998). *The Other Side of the Error Term: Aging and Development as Model Systems In Cognitive Neuroscience. Advances in Psychology series, v. 125*. Amsterdam, The Netherlands: Elsevier Science.

Recent Conference Presentations

Rodrigue, KM., Kennedy, KM, Head, D., Williamson, A. and Raz, N. Aging and long-term retention of a cognitive skill. Presented at the Annual Meeting of the Cognitive Neuroscience Society, April 2005, New York, NY.

Head, D., Gunning-Dixon, F., Williamson, A., Acker, JD., and Raz, N. Neuroanatomical and cognitive correlates of age-related differences in mirror-reading skill acquisition. Presented at the Annual Meeting of the Cognitive Neuroscience Society, April 2005, New York, NY.

Kennedy, KM, Rodrigue, KM, and Raz, N. Age-related perceptual priming, but not perceptual learning is associated with visual cortex volume in healthy adults. Presented at the Annual Meeting of the Cognitive Neuroscience Society, April 2005, New York, NY.

Raz, N. Differential Aging of the brain: Patterns, cognitive correlates and modifiers. Presented at the conference on the Future of Cognitive Aging, May 20, 2005, State College, PA.

Raz, N., Rodrigue, K.M., Kennedy, K.M., Acker, J.D. Aging brain, health and fluid reasoning: A longitudinal study. Presented at the Annual Meeting of the Society for Neuroscience, November 13, 2005, Washington, DC.

Raz, N., Rodrigue, K.M. Kennedy, K.M., & Acker, J.D. The effects of age and vascular health on brain and cognition: a longitudinal study. Presented at the Workshop on *Sensory and Cognitive Impairments in Aging and Neurodegenerative Diseases*, Segovia, Spain, December, 18-20, 2005

Rodrigue, KM, Kennedy K.M., Haacke, E. M., Raz, N. Differential effects of age and hypertension on hemodynamic parameters of the brain. Presented at Cognitive Aging Conference, Atlanta, GA April 23, 2006.

Raz, N., Lindenberger, U, Ghisletta, P., Rodrigue, K. M, Kennedy, KM, & Acker, JD. Regional changes in the aging brain and their implications for cognition. Presented at Cognitive Aging Conference, Atlanta, GA April 23, 2006.

Moffat, S.D., Kennedy, K.M., Rodrigue, K.M. and Raz, N. Age-differences in human spatial navigation: extra-hippocampal contributions. Presented at Cognitive Aging Conference, Atlanta, GA April 23, 2006.

Raz, N. Brain Aging and its Modifiers: Insights from in vivo Neuromorphometry. Presented at the New York Academy of Science – American Federation for Aging Research Symposium, New York, NY May 17, 2006

Rodrigue, K.M., Kennedy, K.M., Haacke, E.M., and Raz, N. Differential effects of age and hypertension on hemodynamic parameters of the brain. Presented at the Annual Meeting of the Organization for Human Brain Mapping at Florence, Italy, June 11, 2006

Raz, N., Lindenberger, U., Ghisletta, P., Rodrigue, K.M., Kennedy, K.M., Acker, J.D., Regional Changes in the Aging Brain, Vascular Health, and Implications for Cognition. Presented at the Annual Meeting of the

Organization for Human Brain Mapping at Florence, Italy, June 11, 2006.

Kennedy, K.M., Erickson, K.I., Rodrigue, K.M., Webb, M. Colcombe, S.J., Kramer, A.F., Raz, N. Age-Related Differences in Regional Brain Volumes: A Comparison of Manual Volumetry and Voxel Based Morphometry. Presented at the Annual Meeting of the Organization for Human Brain Mapping at Florence, Italy, June 13, 2006.

Raz, N. Aging of the Brain: Neurobiology and Imaging. Plenary talk, presented at the Alzheimer's Imaging Consortium Annual Meeting, Madrid, Spain, July 15, 2006.

Kennedy, K.M., Erickson, K.I., Rodrigue, K.M., Voss, M., Kramer, A.F., Raz, N. Age-Related Differences in Regional Brain Volumes: Manual Volumetry vs. Voxel-Based Morphometry. Presented at Cognitive Neuroscience Society annual meeting, New York, NY, May 6, 2007.

Raz, N. Structural changes and cognitive consequences: Studies of brain aging and its modifiers. Presented at the Longevity Consortium Symposium, Santa Fe, NM, May 17, 2007.

Raz, N. Differential Brain Aging and its Modifiers: Volumetric Findings. Presented at the Neuroradiology Education and Research (NER) Foundation Symposium 2007: *The Aging Brain*, Annual Meeting of American Neuroradiological Society, Chicago, IL, June 9, 2007.

Raz, N., Rodrigue, K.M., Kennedy, K.M., Land, S. Selected single-nucleotide polymorphisms and cognitive performance: Differential associations. Presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA, November 7, 2007.

Kennedy, K.M., and Raz, N. Regional white matter integrity and cognitive performance: the effects of age and vascular risk factors. Presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA, November 4, 2007.

Rodrigue K. M. Haacke, E.M., & Raz N. Differential effects of age and hypertension on regional brain structure and function assessed by regional T2* relaxometry and volumetry. Presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA, November 7, 2007