

COMPENDIUM – COGNITIVE NEUROSCIENCE OF AGING

York University Centre for Aging Research and Education (YU-CARE)

The research produced by YU-CARE members and associates* along the theme of the cognitive neuroscience of aging are impactful at the individual, organizational, and societal levels. Research spans from topics including:

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*Authors shown in bold indicate a YU-CARE committee or associate member.

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THEME 3: THE COGNITIVE NEUROSCIENCE OF AGING

Among several topics, studies investigate memory changes; motor coordination; perception; attention; learning; and executive function among older adults. Related research explores different cognitive therapies and treatments.

3.1 ATTENTION

1. Roberts, Wilson, A., Rahimi, A., Gorbet, D., Sergio, L., Stevens, W. D., & Wojtowicz, M. (2022). Investigation of baseline attention, executive control, and performance variability in female varsity athletes. *Brain Imaging and Behavior*, 16(4), 1636–1645. <https://doi.org/10.1007/s11682-022-00635-8>
2. Sidani, S., **Fox, M.T.**, Butler, J., & Ilo-Katryn Maimets (in press). Development of a multi-component intervention to promote sleep in persons with dementia transitioning from hospital to home. *International Journal of Older People's Nursing*
3. D'Amour S, **Harris LR**, Berti S, Keshavarz B (2021) The role of cognitive factors and personality traits in the perception of illusory self-motion (vection). *Attention Perception and Psychophysics*. 83: 1804-1817
4. Comishen, K.J., & **Bialystok**, E. (2021). Increases in attentional demands are associated with language group differences in working memory performance. *Brain and Cognition*, 147, 105658-105658. <https://doi.org/10.1016/j.bandc.2020.105658>
5. **Turner, G.R.**, Novakovic-Agopian, T., †Kornblith E., †Adnan A., Madore, M., Chen, A.J.W., & D'Esposito, M. (2019). Goal-Oriented Attention Regulation (GOALS) training in older adults. *Aging and Mental Health*. doi: 10.1080/13607863.2018.1534080
6. Spreng, R., **Stevens**, W., Viviano, J. D., & Schacter, D. L. (2016). Attenuated anticorrelation between the default and dorsal attention networks with aging: evidence from task and rest. *Neurobiology of Aging*, 45, 149-160.
7. Kim, T. H., Pascual-Leone, J., Johnson, J., & **Tamim**, H. (2016). The mental-attrition Tai Chi effect with older adults. *BMC Psychology*, 4(29).
8. McLaughlin, P.M., Anderson, N.D., Rich, J.B., Chertkow, H., & **Murtha**, S.J.E. (2013). Visual selective attention in amnesic mild cognitive impairment. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 69(6), 881–891.
9. McLaughlin Paula M., Anderson, Nicole D. Rich, **Jill B.**, Chertkow, Howard, **Murtha**, Susan J. E. (2014) Visual Selective Attention in Amnesic Mild Cognitive Impairment. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(6), 881-891.
10. Levinoff, E. J., Li, K. Z. H., **Murtha**, S., & Chertkow, H. (2004). Selective Attention Impairments in Alzheimer's Disease: Evidence for Dissociable Components. *Neuropsychology*, 18(3), 580-588.

3.2 MOTOR COORDINATION

1. Hurtubise JM, Gorbet DJ, Hynes L, Macpherson AK, **Sergio** LE (2020) White matter integrity and its relationship to cognitive-motor integration in females with and without post-concussion syndrome (In press, Journal of Neurotrauma, <https://doi.org/10.1089/neu.2019.6765>)
2. Rogojin A, Gorbet DJ, **Sergio** LE (2019) Sex, APOE, and dementia family history: Relationship between dementia risk and cognitive-motor integration performance. Rotman Research Institute Conference on Aging & Brain Health: Prevention & Early Detection of Dementia, Toronto, March 2019
3. Echlin HE, Gorbet DJ, **Sergio** LE (2020) Assessment of a Cognitive-Motor Training Program in Adults At-Risk for Developing Dementia (in press, Canadian Geriatrics Journal)
4. de Boer C, Echlin H, V, Rogojin A, Baltaretu B, R, **Sergio** L, E: Thinking-While-Moving Exercises May Improve Cognition in Elderly with Mild Cognitive Deficits: A Proof-of-Principle Study. *Dement Geriatr Cogn Disord Extra* 2018;:248-258.
5. Mostafa AA, 't Hart BM, **Henriques DYP**. Motor Learning Without Moving: Proprioceptive and Predictive Hand Localization After Passive Visuoproprioceptive Discrepancy Training. PLoS One. doi: <https://doi.org/10.1101/384941>, 2019
6. Modchalingam S, Vachon C, 't Hart BM, **Henriques DYP**. The effects of awareness of the perturbation during motor adaptation on hand localization. PLoS One, <https://doi.org/10.1371/journal.pone.0220884>, 2019.
7. Hawkins KM, **Sergio** LE (2016) Changes in resting-state functional connectivity associated with cognitive-motor impairment in older adults at increased Alzheimer's disease risk. *J. Alz. Dis.; Jun 18;53(3):1161-72.*
8. Hawkins, K. M., Goyal, A., & **Sergio**, L. E. (2015). Diffusion tensor imaging correlates of cognitive-motor decline in normal aging and increased Alzheimer's disease risk. *Journal of Alzheimer's Disease*, 44(3), 867-878.
9. Schorer, J. & **Baker**, J. (2009). Aging and perceptual-motor expertise in handball goalkeepers. *Experimental Aging Research*, 35, 1-19.
10. Horton, S., Baker, J., & Schorer, J. (2008). Expertise and aging: Maintaining skills throughout the lifespan. *European Review of Aging and Physical Activity*, 5, 89-96.

3.3 EXECUTIVE FUNCTIONING

1. Hudes, Baptist-Mohseni, N., Dimech, C., Rich, J. B., Troyer, A. K., & Vandermorris, S. (2022). Evaluating the Effectiveness of Compensatory Memory Interventions in Adults With Acquired Brain Injury: A Systematic Review and Meta-Analysis of Memory and Everyday Outcomes. *Neuropsychology*, 36(4), 243–265. <https://doi.org/10.1037/neu0000799>
2. Romero, Ladyka-Wojcik, N., Heir, A., Bellana, B., Leach, L., & Proulx, G. B. (2022). The Influence of Cerebrovascular Pathology on Cluster Analysis of Neuropsychological Scores in Patients With Mild Cognitive Impairment. *Archives of Clinical Neuropsychology*, 37(7), 1480–1492. <https://doi.org/10.1093/arclin/acac043>
3. Romero, Coleman, A., Heir, A., Leach, L., & Proulx, G. B. (2022). Multivariate Base Rates of Low Neuropsychological Test Scores in Cognitively Intact Older Adults with Subjective Cognitive Decline from a Specialist Memory Clinic. *Archives of Clinical Neuropsychology*, 37(7), 1467–1479. <https://doi.org/10.1093/arclin/acac050>
4. Gabriel, Harris, L. R. R., Henriques, D. Y. P., Pandi, M., & Campos, J. L. L. (2022). Multisensory visual-vestibular training improves visual heading estimation in younger and older adults. *Frontiers in Aging Neuroscience*, 14, 816512–816512. <https://doi.org/10.3389/fnagi.2022.816512>
5. Mok, J.N.Y., Green, L., Myerson, J., Kwan, D., Kurczek, J., Ciaramelli, E., Craver, C.F., & **Rosenbaum, R.S.** (2021) Does ventromedial prefrontal cortex damage really increase impulsiveness? Delay and probability discounting in patients with focal lesions. *Journal of Cognitive Neuroscience*, 33(9), 1909-1927. https://doi: 10.1162/jocn_a_01721
6. Adnan, A., Beaty, R., †Lam, J., Spreng, R.N. & **Turner, G.R.** (2019). Intrinsic default – executive coupling of the creative aging brain. *Social Cognitive & Affective Neuroscience*, 14, 291–303
7. Adnan, A., Beaty, R., Silvia, P., Spreng, R.N. & **Turner, G.R.** (2019). Creative aging: Functional brain networks associated with divergent thinking in older and younger adults. *Neurobiology of Aging*. 75, 150–158.
8. Dimech, C.J., Anderson, J.A.E., Lockrow, A.W., **Spreng, R.N.** & Turner, G.R. (2019). Sex differences in the relationship between cardiorespiratory fitness and brain function in older adulthood. *Journal of Applied Physiology*, 126, 1032–1041.
9. Spreng, R.N. & **Turner, G.R.** (2019). The shifting architecture of cognition and brain function in older adulthood. *Perspectives on Psychological Science*, 14, 523–542.
10. Uhlmann L, Pazen M, van Kemenade BM, Steinsträter O, **Harris LR**, Kircher T, Straube B (2020). Seeing your own or someone else’s hand moving in accordance with your action: The neural interaction of agency and hand identity. *Human Brain Mapping* HBM-19-1139-R1.
11. Toth A, **Harris LR**, Bent LR (2019) “Visual feedback is not necessary for recalibrating the vestibular contribution to the dynamic phase of a perturbation recovery response” *Experimental Brain Research* 237: 2185-2196 <https://rdcu.be/bHf9y>
12. **Craik FIM**, Eftekhari E, **Bialystok E**, **Anderson ND**. Individual differences in executive functions and retrieval efficacy in older adults. *Psychology and Aging*. PMID [30507212](https://pubmed.ncbi.nlm.nih.gov/30507212/) DOI: [10.1037/pag0000315](https://doi.org/10.1037/pag0000315)

13. McLaughlin P., Curtis, A. Branscombe-Laird, L., Comrie, J., Murtha S. J.E. (2017) The Feasibility and Potential Impact of Brain Training on Cognitive and Emotional Functioning in Middle-aged Adults. *Games for Health Journal*. Final publication is available from Mary Ann Liebert, Inc.: [http://dx.doi.org/\[<http://online.liebertpub.com/toc/g4h/0/0>\]](http://dx.doi.org/[http://online.liebertpub.com/toc/g4h/0/0]) or <http://bit.ly/2FPhBUz>, (note this was one of five most downloaded articles from the Games for Health journal from January 2018 to January 2019).
14. Adnan, A., Chen, A. J. W., Novakovic-Agopian, T., D'Esposito, M., & **Turner, G. R.** (2017). Brain Changes Following Executive Control Training in Older Adults. *Neurorehabilitation and Neural Repair*, *31(10–11)*, 910–922.
15. Hunt, A., **Turner, G.R.**, Polatajko, H., Bottari, C., Dawson, D. (2013) Executive function, self-regulation and attribution in acquired brain injury: a scoping review. *Neuropsychological Rehabilitation*.
16. Spreng, R.N. & **Turner, G.R.** (2013). Structural covariance of the default network in healthy and pathological aging. *Journal of Neuroscience*, *33(38)*. 15226-15234.
17. Spreng, R.N., Sepulcre, J., **Turner, G.R.**, Stevens, W.D., & Schacter, D.L. (2013). Intrinsic architecture underlying the relations among the default, dorsal attention, and frontoparietal control networks of the human brain. *Journal of Cognitive Neuroscience*. *25*, 74-86.
18. **Turner, G.R.** & Spreng, R.N. (2012). Executive control and neurocognitive aging: Dissociable patterns of brain activity for working memory and inhibition. *Neurobiology of Aging*. *33*, 826.e1–826.e13.
19. Noakovic-Agopian, T., Chen, A.J.W., Rome, S. Rossi, A., Abrams, G., D'Esposito, M., **Turner, G.R.** et al., (2012). Assessment of Sub-components of Executive Functioning in Ecologically Valid Settings: The Goal Processing Scale. *Journal of Head Trauma Rehabilitation*.
20. DiGirolamo, G. J., Kramer, A. F., Barad, V., **Cepeda, N. J.**, Weissman, D. H., Milham, M. P., Wszalek, T. M., Cohen, N. J., Banich, M. T., Webb, A., Belopolsky, A. V., & McAuley, E. (2001). General and task-specific frontal lobe recruitment in older adults during executive processes: An fMRI investigation of task switching. *Neuroreport*, *12*, 2065-2071.

3.3.1 Bilingualism & Aging

1. Stevens, W. D., Khan, N., Anderson, J. E. A., Grady, C. L., & Bialystok, E. (2023) A neural mechanism of cognitive reserve: the case of bilingualism. *NeuroImage*, 281, 120365. [doi: 10.1016/j.neuroimage.2023.120365](https://doi.org/10.1016/j.neuroimage.2023.120365)
2. Berkes, & Bialystok, E. (2022). Bilingualism as a Contributor to Cognitive Reserve: What it Can do and What it Cannot do. *American Journal of Alzheimer's Disease and Other Dementias*, *37*, 15333175221091417–15333175221091417. <https://doi.org/10.1177/15333175221091417>

3. Bialystok, & Craik, F. I. M. (2022). How does bilingualism modify cognitive function? Attention to the mechanism. *Psychonomic Bulletin & Review*, 29(4), 1246–1269. <https://doi.org/10.3758/s13423-022-02057-5>
4. **Bialystok**, E., Anderson, J.A.E., & Grundy, J.G. (2021). Interpreting cognitive decline in the face of cognitive reserve: Does bilingualism affect cognitive aging? *Linguistic Approaches to Bilingualism*, 11(4), 484-504. <https://doi.org/10.1075/lab.18040.bia/>
5. **Bialystok**, E. (2021). Bilingualism: Pathway to Cognitive Reserve. *Trends in Cognitive Sciences*, 25(5), 355-364. <https://doi.org/10.1016/j.tics.2021.02.003>
6. Berkes, M., Calvo, N., Anderson, J.A.E, & **Bialystok**, E. (2021). Poorer clinical outcomes for older adult monolinguals when matched to bilinguals on brain health. *Brain, Structure & Function*, 226(2), 415-424. <https://doi.org/10.1007/s00429-020-02185-5>
7. Berkes M, **Bialystok E**, Craik FIM, Troyer A, Freedman M. Conversion of Mild Cognitive Impairment to Alzheimer Disease in Monolingual and Bilingual Patients. *Alzheimer Disease and Associated Disorders*. PMID 32049674 DOI: [10.1097/WAD.0000000000000373](https://doi.org/10.1097/WAD.0000000000000373)
8. **Bialystok E**, Dey A, Sullivan MD, Sommers MS. Using the DRM paradigm to assess language processing in monolinguals and bilinguals. *Memory & Cognition*. PMID 31975029 DOI: [10.3758/s13421-020-01016-6](https://doi.org/10.3758/s13421-020-01016-6)
9. Barker RM, **Bialystok E**. Processing differences between monolingual and bilingual young adults on an emotion n-back task. *Brain and Cognition*. 134: 29-43. PMID 31108367 DOI: [10.1016/j.bandc.2019.05.004](https://doi.org/10.1016/j.bandc.2019.05.004)
10. Grundy JG, **Bialystok E**. When a "Replication" Is Not a Replication. Commentary: Sequential Congruency Effects in Monolingual and Bilingual Adults. *Frontiers in Psychology*. 10: 797. PMID 31031674 DOI: [10.3389/fpsyg.2019.00797](https://doi.org/10.3389/fpsyg.2019.00797)
11. Berkes M, Friesen DC, **Bialystok E**. Cultural Context as a Biasing Factor for Language Activation in Bilinguals. *Language, Cognition and Neuroscience*. 33: 1032-1048. PMID 30899766 DOI: [10.1080/23273798.2018.1446541](https://doi.org/10.1080/23273798.2018.1446541)
12. Grundy JG, **Bialystok E**. Monolinguals and bilinguals disengage attention differently following conflict and errors: Evidence from ERPs. *Brain and Cognition*. 128: 28-36. PMID 30447505 DOI: [10.1016/j.bandc.2018.11.006](https://doi.org/10.1016/j.bandc.2018.11.006)
13. Anderson JAE, Chung-Fat-Yim A, Bellana B, Luk G, **Bialystok E**. Language and Cognitive Control Networks in Bilinguals and Monolinguals. *Neuropsychologia*. PMID 29959966 DOI: [10.1016/j.neuropsychologia.2018.06.023](https://doi.org/10.1016/j.neuropsychologia.2018.06.023)
14. Sullivan MD, Poarch GJ, **Bialystok E**. Why is Lexical Retrieval Slower for Bilinguals? Evidence from Picture Naming. *Bilingualism (Cambridge, England)*. 21: 479-488. PMID 29910667 DOI: [10.1017/S1366728917000694](https://doi.org/10.1017/S1366728917000694)
15. D'Souza, A. A., Moradzadeh, L., & **Wiseheart, M.** (2018). Musical training, bilingualism, and executive function: Working memory and inhibitory control. *Cognitive Research: Principles and Implications*, 3(11).
16. **Bialystok**, E., Hawrylewicz, K., **Wiseheart, M.**, & Toplak, M. (2017). Interaction of bilingualism and attention-deficit/hyperactivity disorder in young adults. *Bilingualism: Language and Cognition*, 20, 588-601.
17. **Bialystok**, E., & Sullivan, M.D. (Eds.) (2017). Growing old with two languages: Effects of bilingualism on cognitive aging. Amsterdam: John Benjamins Publishing.
18. **Bialystok**, E., Abutalebi, J., Bak, T. H., Burke, D. M., & Kroll, J. F. (2016). Aging in two languages: Implications for public health. *Ageing Research Reviews*, 27, 56-60.
19. Grady, C. L., Luk, G., Craik, F. I., & **Bialystok**, E. (2015). Brain network activity in monolingual and bilingual older adults. *Neuropsychologia*, 66, 170-181.

20. Friesen, D. C., Luo, L., Luk, G., & **Bialystok**, E. (2015). Proficiency and control in verbal fluency performance across the lifespan for monolinguals and bilinguals. *Language, Cognition and Neuroscience*, *30*(3), 238-250.
21. Olsen, R. K., Pangelinan, M. M., Bogulski, C., Chakravarty, M. M., Luk, G., Grady, C. L., & **Bialystok**, E. (2015). The effect of lifelong bilingualism on regional grey and white matter volume. *Brain Research*, *1612*, 128-139.
22. Clare, L., Whitaker, C. J., Craik, F. I., **Bialystok**, E., Martyr, A., Martin-Forbes, P. A., ... Hindle, J. V. (2014). Bilingualism, executive control, and age at diagnosis among people with early-stage Alzheimer's disease in Wales. *Journal of Neuropsychology*, *10*(2), 163-185.
23. Morris Freedman, Suvarna Alladi, Howard Chertkow, et al., "Delaying Onset of Dementia: Are Two Languages Enough?," *Behavioural Neurology*, vol. 2014, Article ID 808137, 8 pages, 2014. (**Bialystok**, E.)
24. **Bialystok**, E., Craik, F. I. M., Binns, M. A., Osher, L., & Freedman, M. (2014). Effects of bilingualism on the age of onset and progression of MCI and AD: Evidence from executive function tests. *Neuropsychology*, *28*(2), 290-304.
25. **Bialystok**, E., Poarch, G., Luo, L., & Craik, F. I. M. (2014). Effects of bilingualism and aging on executive function and working memory. *Psychology and Aging*, *29*(3), 696-705.
26. Schweizer, T. A., Craik, F. I., & **Bialystok**, E. (2013). Bilingualism, not immigration status, is associated with maintained cognitive level in Alzheimer's disease. *Cortex*, *49*(5), 1442-1443.
27. Schweizer, T. A., Ware, J., Fischer, C. E., Craik, F. I., & **Bialystok**, E. (2012). Bilingualism as a contributor to cognitive reserve: Evidence from brain atrophy in Alzheimer's disease. *Cortex*, *48*(8), 991-996.
28. **Bialystok**, E., Craik, F., & Luk, G. (2008). Cognitive control and lexical access in younger and older bilinguals. *Journal of Experimental Psychology*, *34*(4), 859-873.
29. **Bialystok**, E., Craik, F. I., & Freedman, M. (2007). Bilingualism as a protection against the onset of symptoms of dementia. *Neuropsychologia*, *45*(2), 459-464.
30. Fernandes, M. A., Craik, F., **Bialystok**, E., & Kreuger, S. (2007). Effects of bilingualism, aging, and semantic relatedness on memory under divided attention. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale*, *61*(2), 128-141.

3.4 Learning

1. Curtis, A.F., **Turner, G.R.**, Park, N.W., and Murtha, S.J.E. (2019). Improving visual spatial working memory in younger and older adults: effects of cross-modal cues. *Neuropsychology, Development, and Cognition, Section B, Aging, Neuropsychology and Cognition*, *26*, 24-43.
2. Troyer, A. K., Leach, L., Vandermorris, S., & **Rich, J. B.** (2019). Measuring metamemory in diverse populations and settings: A systematic review and meta-analysis of the Multifactorial Memory Questionnaire. *The measurement of participant-reported memory across diverse populations and settings: a systematic review and meta-analysis of the Multifactorial Memory Questionnaire*

3. Hudes, R., **Rich, J. B.**, Troyer, A. K. Yusupov, I., & Vandermorris, S. (2019). [The impact of memory-strategy training interventions on participant-reported outcomes in healthy older adults: A systematic review and meta-analysis. *Psychology and Aging, 34\(4\), 587-597.*](#)
4. Bernstein, L. J., McCreath, G. A., Nyhof-Young, J., Dissanayake, D., & **Rich, J. B.** (2018). A brief psychoeducational intervention improves memory contentment in breast cancer survivors with cognitive concerns: Results of a single-arm prospective study. *Supportive Care in Cancer, 26(8)*, 2851-2859. <https://doi.org/10.1007/s00520-018-4135z>
5. Shaikh, K. T., Tatham, E. L., Parikh, P. K., McCreath, G. A., **Rich, J. B.**, & Troyer, A. K. (2018). [Development and psychometric validation of a novel questionnaire assessing the impact of memory changes. *The Gerontologist.*](#)
6. D'Souza, A. A., Moradzadeh, L., & **Wiseheart, M.** (2018). Musical training, bilingualism, and executive function: Working memory and inhibitory control. *Cognitive Research: Principles and Implications, 3(11)*.
7. **Turner, G.R.**, Novakovic-Agopian, T., †Kornblith E., †Adnan A., Madore, M., Chen, A.J.W., & D'Esposito, M. (2019). Goal-Oriented Attention Regulation (GOALS) training in older adults. *Aging and Mental Health*. doi: 10.1080/13607863.2018.1534080
8. Echlin HE, Gorbet DJ, **Sergio LE** (2020) Assessment of a Cognitive-Motor Training Program in Adults At-Risk for Developing Dementia (in press, Canadian Geriatrics Journal)
9. Vachon C, Modchalingam S, 't Hart BM, **Henriques DYP**. The effect of age on visuomotor learning processes. Under review in PLoS One. Uploaded July 2019. PsyArxiv. <https://psyarxiv.com/jx79q/>
10. D'Souza, A. A., Moradzadeh, L., & **Wiseheart, M.** (2018). Musical training, bilingualism, and executive function: Working memory and inhibitory control. *Cognitive Research: Principles and Implications, 3(11)*.
11. Kim, A. S. N., Saberi, F. M., **Wiseheart, M.**, & Rosenbaum, R. S. (2018). Ameliorating episodic memory deficits in a young adult with developmental (congenital) amnesia. *Journal of the International Neuropsychological Society, 24(9)*, 1003-1012.
12. Bercovitz, K. E., Bell, M. C., Simone, P. M., & **Wiseheart, M.** (2017). The spacing effect in older and younger adults: Does context matter? *Aging, Neuropsychology, and Cognition, 24*, 703-716.
13. Peisachovich, E. H., **Murtha, S.**, Phillips, A, and Messinger, G. (2016). Flipping the Classroom: A Pedagogical Approach to Applying Clinical Judgment by Engaging, Interacting, and Collaborating with Nursing Students. *International Journal of Higher Education*. <http://www.sciedu.ca/journal/index.php/ijhe/article/view/10353>
14. Peisachovich, E., Nelles, L.J., **Murtha, S.**, Popovic, C., Epstein, I., and Da Silva, C. (2017) Proposing a Model to Embed a Simulated-Person Methodology Program within Higher Education. *Journal of Innovation in Teaching and Education International*. <http://www.tandfonline.com/doi/full/10.1080/14703297.2017.1399808>

15. Ryan, J. D., D'Angelo, M. C., Kamino, D., Ostreicher, M., Moses, S. N., & **Rosenbaum, R. S.** (2016). Relational learning and transitive expression in aging and amnesia. *Hippocampus*, *26*(2), 170–184.
16. Ostreicher, M.L., Moses, S.N., **Rosenbaum, R.S.**, & Ryan, J.D. (2010). Prior experience supports new learning of relations in aging. *Journal of Gerontology: Psychological Sciences*, *65B*(1), 32–41
17. Lubinsky, T., **Rich, J.**, & Anderson, N. (2009). Errorless learning and elaborative self-generation in healthy older adults and individuals with amnesic mild cognitive impairment: Mnemonic benefits and mechanisms. *Journal of the International Neuropsychological Society*, *15*(5), 704-716.

3.5 Memory

1. Hudes, Baptist-Mohseni, N., Dimech, C., Rich, J. B., Troyer, A. K., & Vandermorris, S. (2022). Evaluating the Effectiveness of Compensatory Memory Interventions in Adults With Acquired Brain Injury: A Systematic Review and Meta-Analysis of Memory and Everyday Outcomes. *Neuropsychology*, *36*(4), 243–265. <https://doi.org/10.1037/neu0000799>
2. Romero, Ladyka-Wojcik, N., Heir, A., Bellana, B., Leach, L., & Proulx, G. B. (2022). The Influence of Cerebrovascular Pathology on Cluster Analysis of Neuropsychological Scores in Patients With Mild Cognitive Impairment. *Archives of Clinical Neuropsychology*, *37*(7), 1480–1492. <https://doi.org/10.1093/arclin/acac043>
3. Romero, Coleman, A., Heir, A., Leach, L., & Proulx, G. B. (2022). Multivariate Base Rates of Low Neuropsychological Test Scores in Cognitively Intact Older Adults with Subjective Cognitive Decline from a Specialist Memory Clinic. *Archives of Clinical Neuropsychology*, *37*(7), 1467–1479. <https://doi.org/10.1093/arclin/acac050>
4. Freud, Di Giammarino, D., Stajduhar, A., Rosenbaum, R. S., Avidan, G., & Ganel, T. (2022). Recognition of Masked Faces in the Era of the Pandemic: No Improvement Despite Extensive Natural Exposure. *Psychological Science*, *33*(10), 1635–1650. <https://doi.org/10.1177/09567976221105459>
5. Halilova, J.G, Addis, D.R., & **Rosenbaum, R.S.** (2020). Getting better without memory. *Social Cognitive and Affective Neuroscience*, *15*(8), 815-825. <https://doi.org/10.1093/scan/nsaa105>
6. Curtis, A.F., **Turner, G.R.**, Park, N.W., and Murtha, S.J.E. (2019). Improving visual spatial working memory in younger and older adults: effects of cross-modal cues. *Neuropsychology, Development, and Cognition, Section B, Aging, Neuropsychology and Cognition*, *26*, 24-43.
7. Troyer, A. K., Leach, L., Vandermorris, S., & **Rich, J. B.** (2019). Measuring metamemory in diverse populations and settings: A systematic review and meta-analysis of the Multifactorial Memory Questionnaire. *Memory*. <https://doi.org/10.1080/09658211.2019.1608255>
8. **Hudes, R.**, **Rich, J. B.**, Troyer, A. K. **Yusupov, I.**, & Vandermorris, S. (2019). The impact of memory-strategy training interventions on participant-reported outcomes in

- healthy older adults: A systematic review and meta-analysis. *Psychology and Aging*, 34(4), 587-597. <http://dx.doi.org/10.1037/pag0000340>
9. Bernstein, L. J., **McCreath, G. A.**, Nyhof-Young, J., Dissanayake, D., & **Rich, J. B.** (2018). A brief psychoeducational intervention improves memory contentment in breast cancer survivors with cognitive concerns: Results of a single-arm prospective study. *Supportive Care in Cancer*, 26(8), 2851-2859. <https://doi.org/10.1007/s00520-018-4135z>
 10. **Shaikh, K. T.**, **Tatham, E. L.**, Parikh, P. K., **McCreath, G. A.**, **Rich, J. B.**, & Troyer, A. K. (2018). Development and psychometric validation of a novel questionnaire assessing the impact of memory changes. *The Gerontologist*. <https://doi.org/10.1093/geront/gny011>
 11. D'Souza, A. A., Moradzadeh, L., & **Wiseheart, M.** (2018). Musical training, bilingualism, and executive function: Working memory and inhibitory control. *Cognitive Research: Principles and Implications*, 3(11).
 12. **Curtis, A.**, Turner G. A., Park N., **Murtha S. J. E.** (2017) Improving Visual Spatial Working Memory in Younger and Older Adults: Effects of Cross-Modal Cues. *Journal of Aging, Neuropsychology and Cognition*, Fall 2017.
 13. Hudes, R., **Rich, J. B.**, Troyer, A. K., Yusupov, I., & Vandermorris, S. (2019). The impact of memory-strategy training interventions on participant-reported outcomes in healthy older adults: A systematic review and meta-analysis. *Psychology and Aging*, 34(4), 587-597.
 14. Curtis, A. F., **Park, N. W.**, **Turner, G. R.**, & **Murtha, S. J. E.** Improving spatial working memory in younger and older adults: Effects of crossmodal cues. *2016 Cognitive Aging Conference, Atlanta, Georgia*.
 15. Komal T Shaikh, Erica L Tatham, Preeyam K Parikh, Graham A McCreath, Jill B **Rich**, Angela K Troyer, Development and Psychometric Validation of a Questionnaire Assessing the Impact of Memory Changes in Older Adults, *The Gerontologist*.
 16. Bercovitz, K. E., Bell, M. C., Simone, P. M., & **Wiseheart, M.** (2017). The spacing effect in older and younger adults: Does context matter? *Aging, Neuropsychology, and Cognition*, 24, 703-716.
 17. Simone, P. M., Bell, M., & **Cepeda, N. J.** (2013). Diminished but not forgotten: Effects of aging on magnitude of spacing effect benefits. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 68, 674-680.
 18. **Rosenbaum, R.**, Winocur, G., Binns, M. A., & Moscovitch, M. (2012). Remote spatial memory in aging: all is not lost. *Frontiers in Aging Neuroscience*.
 19. Crete-Nishihata, M., Baecker, R.M., Massimi, M., Ptak, D., Campigotto, R., Kaufman, L.D., Brickman, A.M., **Turner, G.R.**, Steinerman, J., and Black, S.E. (2012). Reconstructing the Past: Personal Memory Technologies Are Not Just Personal and Not Just for Memory. *Human-Computer Interaction*. 27(1-2). 1-32.
 20. Winocur, G., Moscovitch, M., **Rosenbaum, R. S.**, & Sekeres, M. (2010). A study of remote spatial memory in aged rats. *Neurobiology of Aging*, 31, 143-150.
 21. **Rosenbaum, R. S.**, Furey, M. L., Horwitz, B., & Grady, C. L. (2010). Altered connectivity among emotion-related brain regions during short-term memory in Alzheimer's disease. *Neurobiology of aging*, 31(5), 780-786.

22. Karantzoulis, S., Troyer, A., & **Rich, J.** (2009). Prospective memory in amnesic mild cognitive impairment. *Journal of the International Neuropsychological Society*, *15*(3), 407-415.
23. Levine, B., Svoboda, E.M., **Turner, G.R.**, Mandic, M., & Mackey, A. (2009). Behavioral and functional neuroanatomical correlates of autobiographical memory in isolated retrograde amnesic patient M.L. *Neuropsychologia*, *47*(11). Pages 2188-2196
24. **Stevens, W.**, Hasher, L., Chew, K. S., & Grady, C. L. (2008). A neural mechanism underlying memory failure in older adults. *The Journal of Neuroscience*, *28*(48), 12820-12824.
25. Roncadin, C., Pascual-Leone, J., **Rich, J.**, & Dennis, M. (2007). Developmental relations between working memory and inhibitory control. *Journal of the International Neuropsychological Society*, *13*(1), 59-67.
26. Phillips, N. A., Chertkow, H., Leblanc, M. M., Pim, H., & **Murtha, S.** (2004). Functional and anatomical memory indices in patients with or at risk for Alzheimer's disease. *Journal of the International Neuropsychological Society*, *10*, 200-210.
27. Troyer, A. K., & **Rich, J. B.** (2002). Psychometric properties of a new metamemory questionnaire for older adults. *Journal of Gerontology: Psychological Sciences*, *57B*(1), 19-27.
28. Fung, T. D., Chertkow, H., **Murtha, S.**, Whatmough, C., Péloquin, L., Whitehead, V., & Templeman, F. D. (2001). The spectrum of category effects in object and action knowledge in dementia of the Alzheimer's type. *Neuropsychology*, *15*(3), 371-379.

3.6 PERCEPTION

1. Rogojin A, Gorbet D, Hawkins KM, Sergio LE (2023) Differences in structural MRI and diffusion tensor imaging underlie visuomotor performance declines in older adults with an increased risk for Alzheimer's disease. *Frontiers in Aging Neuroscience* Jan 12;14:1054516. doi: [10.3389/fnagi.2022.1054516](https://doi.org/10.3389/fnagi.2022.1054516)
2. Baltaretu, B. R., Stevens, W. D., Freud, E., & Crawford, J. D. (2023). Occipital and parietal cortex participate in a cortical network for transsaccadic discrimination of object shape and orientation. *Scientific Reports*, *13*, 11628. doi: [10.1038/s41598-023-38554-3](https://doi.org/10.1038/s41598-023-38554-3)
3. Jorges, & Harris, L. R. (2022). Object speed perception during lateral visual self-motion (Oct, 10.3758/s13414-021-02372-4, 2021). *Attention, Perception & Psychophysics*, *84*(1), 324–324. <https://doi.org/10.3758/s13414-021-02411-0>
4. Gabriel, Harris, L. R., Gnanasegaram, J. J., Cushing, S. L., Gordon, K. A., Haycock, B. C., & Campos, J. L. (2022). Age-related changes to vestibular heave and pitch perception and associations with postural control. *Scientific Reports*, *12*(1), 6426–6426. <https://doi.org/10.1038/s41598-022-09807-4>
5. Kim, McManus, M. E., & Harris, L. R. (2022). Body Orientation Affects the Perceived Size of Objects. *Perception (London)*, *51*(1), 25–36. <https://doi.org/10.1177/03010066211065673>

6. Harris, Jenkin, M., & Herpers, R. (2022). Long-duration head down bed rest as an analog of microgravity: Effects on the static perception of upright. *Journal of Vestibular Research*, 32(4), 325–340. <https://doi.org/10.3233/VES-210016>
7. Jörges, & Harris, L. R. (2022). Publisher Correction to: Object speed perception during lateral visual self-motion. *Attention, Perception & Psychophysics*, 84(1), 324–324. <https://doi.org/10.3758/s13414-021-02411-0>
8. Ebner, N.C., Ellis, D.M., Lin, T., Rocha, H.A., Yang, H., Dommaraju, S., Soliman, A., Woodard, D.L., **Turner, G.R.**, Spreng, R.N. & Oliveira, D. (2019). Uncovering susceptibility risk to online deception in aging. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*.
9. Massie, A. S., & **Meisner**, B. A. (2019). Perceptions of aging and experiences of ageism as constraining factors of moderate to vigorous leisure-time physical activity in later life. *Society & Leisure*, 42(1), 24-42.
10. **Harris LR**, Jenkin M, Dyde RT, Jenkin H (2011) “Enhancing visual cues to orientation: suggestions for space travellers and the elderly”. *Progress in Brain Research 191: 133-142*
11. Wilson, H. R., Mei, M., Habak, C., & **Wilkinson**, F. (2011). Visual bandwidths for face orientation increase during healthy aging. *Vision Research*, 51, 160-164.
12. McLaughlin, P.M., **Murtha**, S.J.E. (2010). The effects of age and exogenous support on visual search performance. *Experimental Aging Research*, 26 (3), p325-345.
13. Habak, C., **Wilkinson**, F., & Wilson, H. R. (2008). Aging disrupts the neural transformations that link facial identity across views. *Vision Research*, 48(1), 9-15.
14. Habak, C., **Wilkinson**, F., & Wilson, H. R. (2009). Preservation of shape discrimination in aging. *Journal of Vision*, 9(18).
15. Tippett W, J, Krajewski A, **Sergio** L, E: Visuomotor Integration Is Compromised in Alzheimer’s Disease Patients Reaching for Remembered Targets. *Eur Neurol 2007;58:1-11*.
16. Tippett, W. J., & **Sergio**, L. E. (2006). Visuomotor integration is impaired in early stage Alzheimer's disease. *Brain Research*, 1102, 92-102.
17. **Rivest** J, Kim J, S, Intriligator J, Sharpe J, A: Effect of Aging on Visual Shape Distortion. *Gerontology 2004;50:142-151*.

3.7 COGNITIVE THERAPIES AND TREATMENTS

1. Hudes, Baptist-Mohseni, N., Dimech, C., Rich, J. B., Troyer, A. K., & Vandermorris, S. (2022). Evaluating the Effectiveness of Compensatory Memory Interventions in Adults With Acquired Brain Injury: A Systematic Review and Meta-Analysis of Memory and Everyday Outcomes. *Neuropsychology*, 36(4), 243–265. <https://doi.org/10.1037/neu0000799>
2. Simic, T., Bitan, T., **Turner, G.R.**, Chambers, C., Goldberg, D., Leonard, C. & Rochon, E. (2019). The role of executive control in post-stroke aphasia treatment. *Neuropsychological Rehabilitation*, 1-40. DOI: 10.1080/09602011.2019.1611607

3. Sullivan, M.D., Anderson, J.A.E., **Turner, G.R.** & Spreng, R.N. (2019). Intrinsic neurocognitive network connectivity differences between normal aging and mild cognitive impairment are associated with cognitive status and age. *Neurobiology of Aging*, 73, 219–228.
4. D'Souza, A. A., Moradzadeh, L., & **Wiseheart, M.** (2018). Musical training, bilingualism, and executive function: Working memory and inhibitory control. *Cognitive Research: Principles and Implications*, 3(11).
5. Patel, R., Spreng, R.N. & **Turner, G.R.** (2013). Functional brain changes following cognitive and motor skills training: A quantitative meta-analysis. [*Neurorehabilitation and Neural Repair*, 27, 187–199.](#)
6. Saumier, D., **Murtha, S.**, Bergman, H., Phillips, N., Whitehead, V., & Chertkow, H. (2007). Cognitive predictors of donepezil therapy response in Alzheimer disease. [*Dementia and Geriatric Cognitive Disorders*, 24, 28-35.](#)
7. Mohr, E., Nair, V., Sampson, M., **Murtha, S.**, Belanger, G., Pappas, B., & Mendia, T. (1997). Treatment of Alzheimer's disease with sabeluzole: Functional and structural correlates. [*Clinical Neuropharmacology*, 20\(4\), 338-345.](#)
8. Rapp, M. S., Flint, A. J., Herrmann, N., & **Proulx, G.-B.** (1992). Behavioural disturbances in the demented elderly: Phenomenology, pharmacotherapy and behavioural management*. [*The Canadian Journal of Psychiatry*, 37\(9\), 651–657.](#)