

To Do, or Not To Do: Decision Science & ADHD

International Conference on ADHD, 2024

Mike Legett

www.MikeLegett.com

Mike@ADHDcoach.life

Suggested Learning

Beginner / Intermediate

- Donovan, D. (2022). The Anti-Planner: How to Get Sh*t Done When You Don't Feel Like It. Anti-Boring Books.
- Felt, M. (2023, December 2). Experiential Rehabilitation: Trickle-down Self EF-ficacy [Conference Presentation]. 2023 International Conference on ADHD, Baltimore, MD, United States.
 - Dr. Felt also explains his Ambiguity Cycle on the April 11th, 2024 episode of Taking Control: The ADHD Podcast
 - <https://podcasts.apple.com/ro/podcast/adhd-comorbidities-the-depression-anxiety-cocktail-with/id368426151?i=1000652128109>
- Boraud, T. (2020). How the brain makes decisions. Oxford Univ Press.
- Jeff Copper's Cognitive Ergonomics From the Inside Out course.
<https://digcoaching.com/cognitive-ergonomics/>
- Youtube Channel: Sense of Mind. <https://www.youtube.com/@senseofmindshow>

Advanced

- Bardgett, M., Depenbrock, M., Downs, N., Points, M., & Green, L. (2009). Dopamine Modulates Effort-Based Decision Making in Rats. Behavioral Neuroscience, 123(2), 242-251.
- Barkley, R. A. (2018). Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment (4th ed.). Guilford Press.

- Lopez-Gamundi, P., Yao, Y., Chong, T., Heekeren, H., Herrero, E., Pallares, J., & , (2021). The neural basis of effort valuation: A meta-analysis of functional magnetic resonance imaging studies. *Neuroscience and Behavioral Reviews* 131, 1275-1287 (2021)
- Naqvi, N., Shiv, B., & Bechara, A. (2006). The Role of Emotion in Decision Making. *Current Directions in Psychological Science*, 15(5), 260-264.
- Simpson, E. H., & Balsam, P. D. (2016). *Behavioral Neuroscience of Motivation*. Springer International Publishing.
- Yu, X., & Sonuga-Barke, E. (2020). Childhood ADHD and Delayed Reinforcement: A Direct Comparison of Performance on Hypothetical and Real-Time Delay Tasks. *Journal of Attention Disorders*, 24(5), 810-818.

Full References

- Bardgett, M., Depenbrock, M., Downs, N., Points, M., & Green, L. (2009). Dopamine Modulates Effort-Based Decision Making in Rats. *Behavioral Neuroscience*, 123(2), 242-251.
- Barkley, R. A. (2018). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed.). Guilford Press.
- Blum, K., Chen, A. L., Braverman, E. R., Comings, D. E., Chen, T. J., Arcuri, V., Blum, S. H., Downs, B. W., Waite, R. L., Notaro, A., Lubar, J., Williams, L., Prihoda, T. J., Palomo, T., & Oscar-Berman, M. (2008). Attention-deficit-hyperactivity disorder and reward deficiency syndrome. *Neuropsychiatric disease and treatment*, 4(5), 893–918. <https://doi.org/10.2147/ndt.s2627>
- Boraud, T. (2020). *How the brain makes decisions*. Oxford Univ Press.
- Chen, X., Voets, S., Jenkinson, N., & Galea, J. M. (2019). Dopamine-dependent loss aversion during effort-based decision-making. *The Journal of Neuroscience*, 40(3), 661–670. <https://doi.org/10.1523/jneurosci.1760-19.2019>
- Chong, T., Fortunato, E., & Bellgrove, M. (2023). Amphetamines Improve the Motivation to Invest Effort in Attention-Deficit/Hyperactivity Disorder. *Journal of Neuroscience*, 43(41), 6898-6908.
- Copper, J. (2023, November 30). ADHD: Taking a Systems Engineer Approach to Organization [Conference Presentation]. 2023 International Conference on ADHD, Baltimore, MD, United States.

- Felt, M. (2023, December 2). Experiential Rehabilitation: Trickle-down Self EF-ficacy [Conference Presentation]. 2023 International Conference on ADHD, Baltimore, MD, United States.
- Gabrieli-Seri, O., Ert, E., & Pollak, Y. (2022). Symptoms of Attention Deficit/Hyperactivity Disorder Are Associated with Sub-Optimal and Inconsistent Temporal Decision Making. *Brain Sciences*, 12(10),
- Hogan, P.S., Galaro, J.K., & Chib, V.S. (2019). Roles of Ventromedial Prefrontal Cortex and Anterior Cingulate in Subjective Valuation of Prospective Effort. *Cerebral Cortex*, 29(10).
- Kandel, E. R., Koester, J. D., Mack, S. H., & Siegelbaum, S. A. (2021). *Principles of Neural Science* (6th ed.). McGraw-Hill.
- Kuan, A.T., Bondanelli, G., Driscoll, L.N. et al. Synaptic wiring motifs in posterior parietal cortex support decision-making. *Nature* 627, 367–373 (2024). <https://doi.org/10.1038/s41586-024-07088-7>
- Lopez-Gamundi, P., Yao, Y., Chong, T., Heekeren, H., Herrero, E., Pallares, J., & , (2021). The neural basis of effort valuation: A meta-analysis of functional magnetic resonance imaging studies. *Neuroscience and Behavioral Reviews* 131, 1275-1287 (2021)
- Ludwiczak A, Osman M, Jahanshahi M. Redefining the relationship between effort and reward: Choice-execution model of effort-based decisions. *Behav Brain Res*. 2020 Apr 6;383:112474. doi: 10.1016/j.bbr.2020.112474. Epub 2020 Jan 15. PMID: 31954099.
- Massar, S., Pu, Z., Chen, C., Chee, M., & , (2020). Losses Motivate Cognitive Effort More Than Gains in Effort-Based Decision Making and Performance. *Frontiers in Human Neuroscience* 14
- Marx, I., Hacker, T., Yu, X., Cortese, S., & Sonuga-Barke, E. (2021). ADHD and the Choice of Small Immediate Over Larger Delayed Rewards: A Comparative Meta-Analysis of Performance on Simple Choice-Delay and Temporal Discounting Paradigms. *Journal of Attention Disorders*, 25(2), 171-187.
- Mehta, T.R., Monegro, A., Nene, Y. et al. Neurobiology of ADHD: A Review. *Curr Dev Disord Rep* 6, 235–240 (2019). <https://doi.org/10.1007/s40474-019-00182-w>
- Michely, J., Viswanathan, S., Hauser, T.U. et al. The role of dopamine in dynamic effort-reward integration. *Neuropsychopharmacol*. 45, 1448–1453 (2020). <https://doi.org/10.1038/s41386-020-0669-0>
- Naqvi, N., Shiv, B., & Bechara, A. (2006). The Role of Emotion in Decision Making. *Current Directions in Psychological Science*, 15(5), 260-264.

- Peixoto, D., Verhein, J.R., Kiani, R. et al. Decoding and perturbing decision states in real time. *Nature* 591, 604–609 (2021). <https://doi.org/10.1038/s41586-020-03181-9>
- Salehinejad MA, Ghanavati E, Rashid MHA, Nitsche MA. Hot and cold executive functions in the brain: A prefrontal-cingular network. *Brain Neurosci Adv.* 2021 Apr 23;5:23982128211007769. doi: 10.1177/23982128211007769. PMID: 33997292; PMCID: PMC8076773.
- Sidarus, N., Palminteri, S., & Chabon, V. (2019). Cost-benefit trade-offs in decision-making and learning. *PLoS Computational Biology*, 15(9),
- Simpson, E. H., & Balsam, P. D. (2016). *Behavioral Neuroscience of Motivation*. Springer International Publishing.
- Suzuki, S., Lawlor, V.M., Cooper, J.A. et al. Distinct regions of the striatum underlying effort, movement initiation and effort discounting. *Nat Hum Behav* 5, 378–388 (2021).
<https://doi.org/10.1038/s41562-020-00972-y>
- Yee, D. M., Crawford, J. L., Lamichhane, B., & Braver, T. S. (2021). Dorsal anterior cingulate cortex encodes the integrated incentive motivational value of cognitive task performance. *The Journal of Neuroscience*, 41(16), 3707–3720. <https://doi.org/10.1523/jneurosci.2550-20.2021>
- Yu, X., & Sonuga-Barke, E. (2020). Childhood ADHD and Delayed Reinforcement: A Direct Comparison of Performance on Hypothetical and Real-Time Delay Tasks. *Journal of Attention Disorders*, 24(5), 810-818.