Group 4: Project 4

1) Implement the Bayesian timing model of Shi et al. (2013) and show how it produces the central tendency effect (Vierordt's law).

2) Show how the model can explain the migration effect in Parkinson's patients on and off medication. Explain the hypothesized computational role of dopamine in this model and relate it to the work of Friston et al. (2012). [Don't worry about all the mathematical details of the Friston paper, just convey the conceptual idea.]

3) Demonstrate how the model can accommodate the scalar timing property by modifying the likelihood as a function of the temporal interval. What does this imply about the relationship between dopamine and the scalar property? How does this explain the observation that dopaminergic stimulants appear to make internal time run faster (Meck, 1996)?

References:

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Meck, W.H. (1996). Neuropharmacology of timing and time perception. *Cognitive Brain Research, 3*, 227–242.

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