A diagram of a normal distribution

Description automatically generated with medium confidence

**Figure 1. Speed-accuracy tradeoffs in the circuit of LDDM.**

(**A**) Reaction time predicted by LDDM with different disinhibition levels. Dark purple corresponds to a bigger beta value, indicating stronger disinhibition with shorter reaction time. Given a fixed input coherence, reaction time decreases as beta increases (*α* = 30; *β* = 0.9, 1.1, 1.3, 1.5, 1.6, 1.7) (**B**) Choice Accuracy predicted by LDDM with different disinhibition levels. Dark purple corresponds to a bigger beta value, indicating stronger disinhibition with smaller accuracy rate. Given a fixed input coherence, accuracy rate decreases as beta increases (*α* = 30; *β* = 0.9, 1.1, 1.3, 1.5, 1.6, 1.7). (**C**) Reaction time predicted by LDDM with different self-excitation levels. Dark purple corresponds to a bigger alpha value, indicating stronger self-excitation with shorter reaction time. Given a fixed input coherence, reaction time decreases as alpha increases (*β* = 1.2; *α* = 0, 10, 20, 30, 40, 50) (**D**) Choice Accuracy predicted by LDDM with different self-excitation levels. Dark purple corresponds to a bigger alpha value, indicating stronger self-excitation with smaller accuracy rate. Given a fixed input coherence, accuracy rate decreases as alpha increases (*β* = 1.2; *α* = 0, 10, 20, 30, 40, 50).

A diagram of different types of strength

Description automatically generated

**Figure 2. Reaction time in speed and accuracy regimes – empirical data and LDDM fitting.**

Each panel shows the reaction time with respect to various motion strengths. The accuracy condition is demonstrated in black, and the speed condition is demonstrated in red. Dots represent the empirical data points, while lines represent fits to the data. Reaction time decreases as motion strength goes up in both regimes. Given a fixed motion strength, reaction time is higher in accuracy condition than in speed condition. (**A**) Empirical data of monkey Dam (Hanks et al. 2014), fitted by the bounded accumulation model. (**B**) Empirical data of monkey Eli (Hanks et al. 2014), fitted by the bounded accumulation model. (**C**) Empirical data of monkey Dam (Hanks et al. 2014), fitted by LDDM. (**D**) Empirical data of monkey Eli (Hanks et al. 2014), fitted by LDDM.

LDDM Model predictions. The model predicted choice accuracy (upper panel) and reaction time (lower panel) over different levels of input strength under high (red) and low (black) values of beta.

A graph of a number of data

Description automatically generated with medium confidence

**Figure 3. Reaction time distribution fitted by LDDM shows different skewness patterns across two monkeys.**

Each panel shows the reaction time with respect to various motion strengths.