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Erich Baker, Sharon Moore, Ami Radunskaya and Elizabeth Zollinger*

(ezollinger@sjcny.edu), 245 Clinton AVE, Brooklyn, NY 11231. *Modeling non-human primate alcohol consumption: a Markov approach*. Preliminary report.

We develop a probabilistic model to classify the level of drinking of a male rhesus macaque given its initial characteristics such as age at induction, bone mineral density, and electrophysiological data. The Monkey Alcohol and Tissue Research Resource (MATRR) has a wealth of behavior and physiological data which we use to calibrate the model. MATRR has standard classifications for long term drinking behavior of the monkey which are very heavy drinker, heavy drinker, binge drinker and low drinker. Using the data of 6 months of drinking for a given cohort, we model second by second drinking by looking at the rate at which a monkey is drinking at any given time. We set the following four states for drinking: not drinking, low drinking, medium drinking, and high drinking. The Markov model has a function describing the likelihood for leaving each state and a probability distribution for transitioning to another state given the state the monkey is currently in. The parameters for each probability is estimated given a set of “training” monkeys. We then test the model by inputting an alternate cohort of known monkeys to simulate drinking and predict the classification for each monkey to see if the model aligns with the original classification. Funded by grant NIAAA #AA019431 (Received September 25, 2017)