Decision Tree: Primate Choice Architecture

Mathematical representation of behavioral outcomes

DECISION POINT

EXPLORE
494 trials
(34.2%)

EXPLOIT
494 trials
(34.2%)
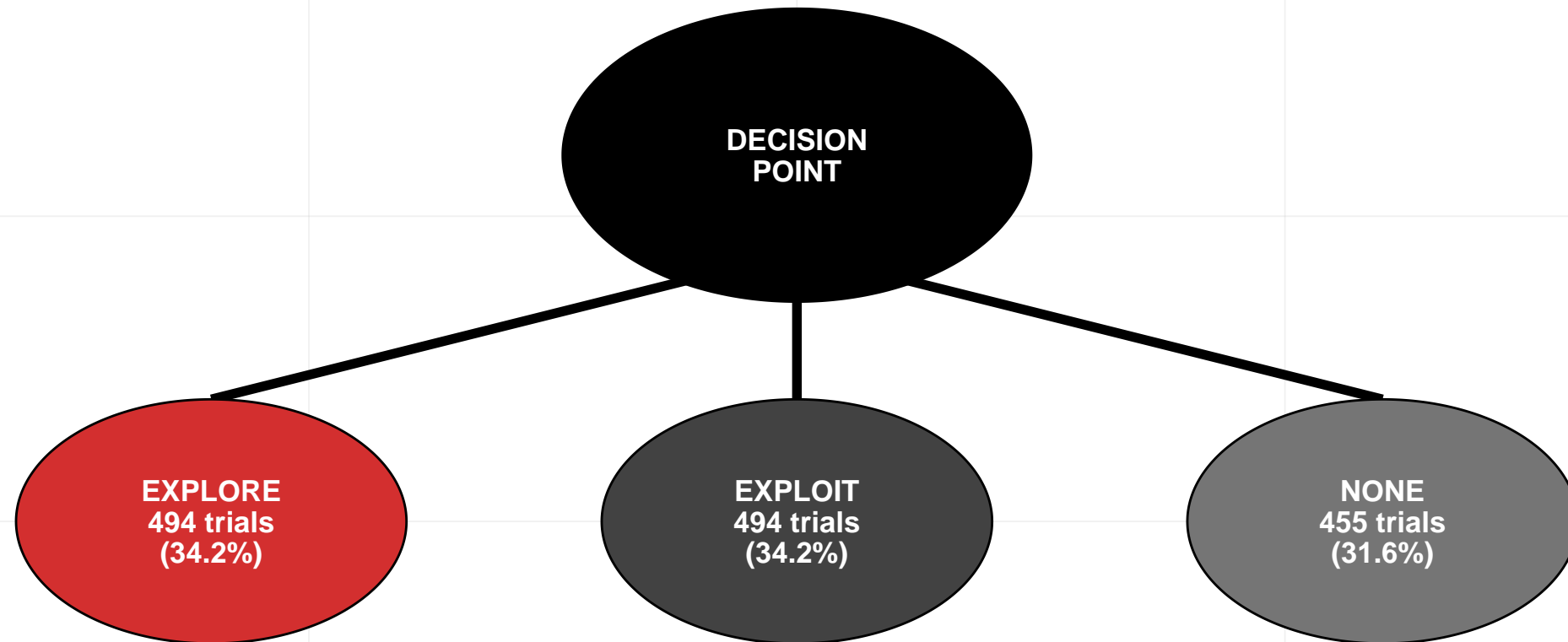
NONE
455 trials
(31.6%)

$Y_{ijk} \sim \text{Multinomial}(p_1, p_2, p_3)$

$p_1 = P(\text{explore}), p_2 = P(\text{exploit}), p_3 = P(\text{none})$

$\log(p_1/p_3) = a_1 + X\beta_1 + u_i + v_j$

$\log(p_2/p_3) = a_2 + X\beta_2 + u_i + v_j$

N = 1,443 decision trials
across 6 monkeys

Three−way classification
with balanced outcomes