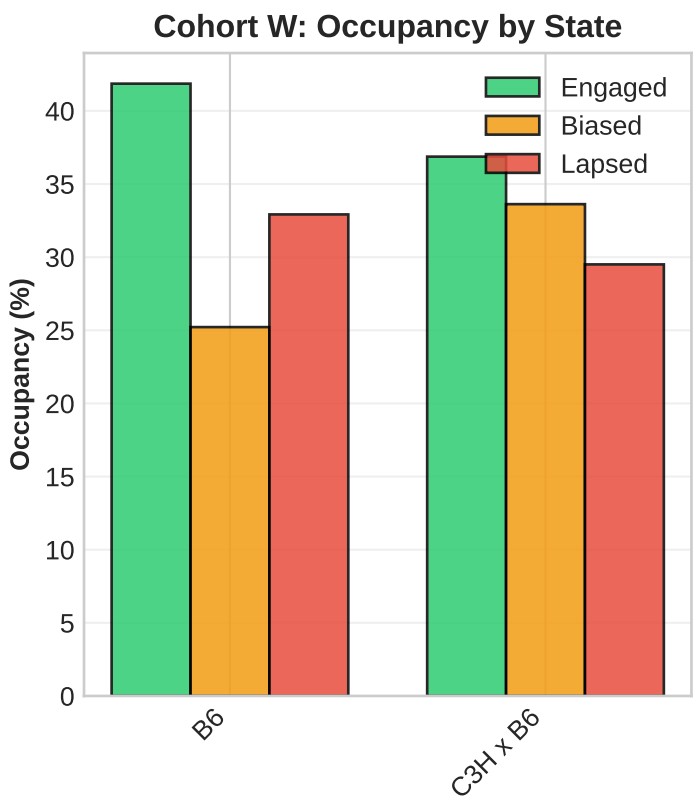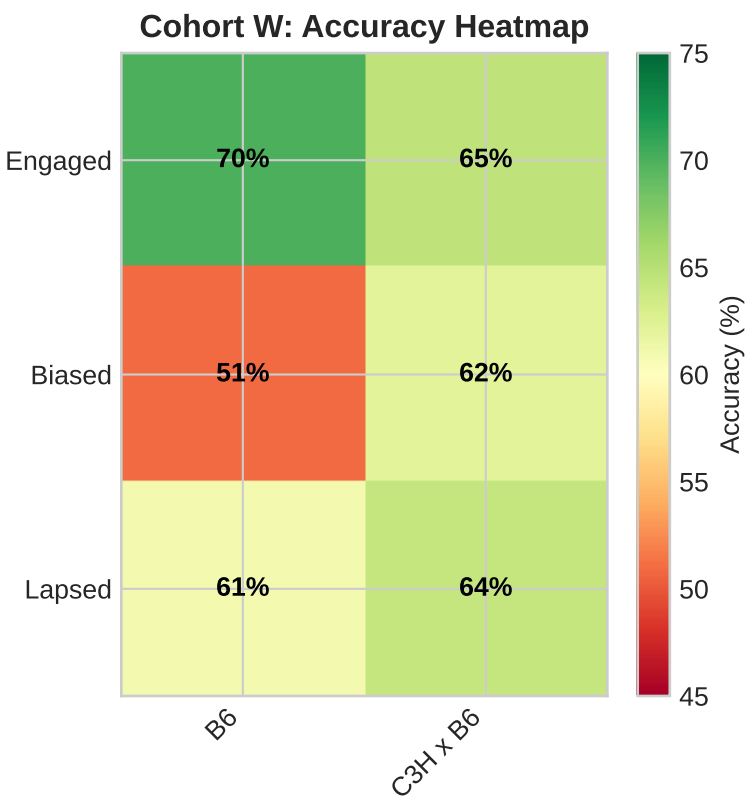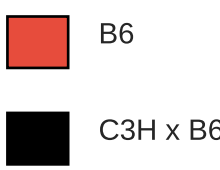Phase 1: Detailed Genotype Comparison with State Effects