## Ratio Expected/Unexpected: 50/50. Average of 44 models Cross temporal decoding score Convergence of loss function on test data red 0.8 1.8 Training time tau (Cross Entropy + L1 oss test data Ω 0.6 1.6 Ω 0.4 1.4 0.2 1.2 0.0 1.0 10 20 30 A A B B CCD D 40 Testing time t **Epoch** Ratio Expected/Unexpected: 60/40. Average of 49 models Cross temporal decoding score Convergence of loss function on test data 1.0 2.0 reg. 0.8 1.8 Training time tau (Cross Entropy + L1 0.6 1.6 - 0.4 1.4 0.2 1.2 0.0 1.0 10 20 30 40 0 AВВ CCD D Testing time t **Epoch** Ratio Expected/Unexpected: 75/25. Average of 100 models Convergence of loss function on test data Cross temporal decoding score 1.0 2.0 (Cross Entropy + L1 reg 1.8 0.8 Training time tau 0.6 1.6 1.4 - 0.4 0.2 1.2 DD 0.0 1.0 0 10 20 30 40 AAВВ CCD D Testing time t **Epoch** Ratio Expected/Unexpected: 90/10. Average of 100 models Cross temporal decoding score Convergence of loss function on test data 1.0 2.0 (Cross Entropy + L1 reg 1.8 0.8 Training time tau 0.6 1.6 - 0.4 1.4 0.2 1.2 0.0 1.0 D D 0 10 20 30 40 A A ВВ CC**Epoch** Testing time t Ratio Expected/Unexpected: 100/0. Average of 56 models

