

S3 Analysis of randomness of choices

The performance of 0.5 in Figure 3 implies that on average the two actions have been selected equally. However, the behaviour of performance around 0.5 does not necessarily imply that actions are chosen randomly. For example, a subject might constantly switch between the two keys (L R L R ...), which will lead to a 0.5 performance, but with actions that are far from random. The results of a ‘Wald-Wolfowitz runs test’ (using ‘runs.test’ in R ‘randtests’ package described in Caeiro and Mateus, 2014), indicated that the behaviour of 96 of the subjects failed this test, i.e., was considered not to be random (p -value <0.001). Of the remaining 5 subjects, only one was given an incorrect diagnostic label prediction by our method (the actual label was Bipolar when it was identified as Depression).