

**Table S1:** Full model with all tested predictors and interactions to explain variation in the parameter  $k$ , which determines how strongly winning and losing predicts the outcome of future interactions.

| parameter   | coefficient | D     | p-value |
|---|-------------|-------|---------|
| (intercept)                                       | 4.904       | 514.0 | < 0.001 |
| aggression intensity index                        | 17.836      | 4.5   | 0.033   |
| genetic hybrid score                              | -0.579      | 0.3   | 0.590   |
| contest outcome                                   | 0.290       | 6.0   | 0.015   |
| age   | -0.019      | 2.0   | 0.155   |
| days inactive                                     | 0.007       | 3.5   | 0.061   |
| aggression intensity index : contest outcome      | -6.948      | 0.9   | 0.330   |
| genetic hybrid score : contest outcome            | 0.102       | 1.9   | 0.165   |
| age : contest outcome                             | -0.034      | 15.7  | < 0.001 |
| days inactive : contest outcome                   | -0.003      | 0.4   | 0.506   |
| aggression intensity index : genetic hybrid score | -0.722      | 0.0   | 0.905   |