Tab. 1: Probabilities for comparisons within every model estimated in hddm analysis.

|  |  |  |
| --- | --- | --- |
| Model | Comparison | Probability |
| 1. Estimating drift-rate for emotion | P(happy > sad) | 1 |
| P(sad > happy) | 0 |
| P(happy > neutral) | 1 |
| P(sad > neutral) | 0 |
| 1. Estimating bias for emotion | P(happy > sad) | 1 |
| P(sad > happy) | 0 |
| P(happy > neutral) | 1 |
| P(sad > neutral) | 0 |
| 1. Estimating drift-rate for timing conditions | P(8ms > 16ms) | 0.13434343 |
| P(8ms > 25ms) | 0.01868687 |
| P(8ms > 141ms) | 0.13333333 |
| P(16ms > 25ms) | 0 |
|  | P(16ms > 141ms) | 0 |
|  | P(25ms > 141ms) | 0 |
| 1. Estimating bias for timing conditions | P(8ms > 16ms) | 0.60507538 |
| P(8ms > 25ms) | 0.04723618 |
| P(8ms > 141ms) | 0 |
| P(16ms > 25ms) | 0.00919598 |
|  | P(16ms > 141ms) | 0 |
|  | P(25ms > 141ms) | 0 |
| 1. Estimating drift-rate for every timing x emotion condition | P(8ms\_happy > 8ms\_sad) | 0.366683417 |
| P(8ms\_happy > 8ms\_neutral) | 0.584924623 |
| P(16ms\_happy > 16ms\_sad) | 1 |
| P(16ms\_happy > 16ms\_neutral) | 0.999296482 |
| P(25ms\_happy > 25ms\_sad) | 1 |
| P(25ms\_happy > 25ms\_neutral) | 1 |
| P(141ms\_happy > 141ms\_sad) | 1 |
| P(141ms\_happy > 141ms\_neutral) | 1 |
| P(8ms\_happy > 16ms\_happy) | 0.004673367 |
| P(8ms\_happy > 25ms\_happy) | 0 |
| P(8ms\_happy > 141ms\_happy) | 0 |
| P(16ms\_happy > 25ms\_happy) | 0.00160804 |
| P(16ms\_happy > 141ms\_happy) | 0 |
| P(25ms\_happy > 141ms\_happy) | 0 |
| P(8ms\_sad > 16ms\_sad) | 0.909648241 |
| P(8ms\_sad > 25ms\_sad) | 0.982663317 |
| P(8ms\_sad > 141ms\_sad) | 0.000100503 |
| P(16ms\_sad > 25ms\_sad) | 0.807788945 |
| P(16ms\_sad > 141ms\_sad) | 0 |
| P(25ms\_sad > 141ms\_sad) | 0 |
| P(8ms\_neutral > 16ms\_neutral) | 0.453417085 |
| P(8ms\_neutral > 25ms\_neutral) | 0.023015075 |
| P(8ms\_neutral > 141ms\_neutral) | 0 |
| P(16ms\_neutral > 25ms\_neutral | 0.013969849 |
| P(16ms\_neutral > 141ms\_neutral) | 0 |
| P(25ms\_neutral > 141ms\_neutral) | 0 |
| 1. Bias for every timing x emotion condition | P(8ms\_happy > 8ms\_sad) | 0.58482412 |
| P(8ms\_happy > 8ms\_neutral) | 0.89482412 |
| P(16ms\_happy > 16ms\_sad) | 1 |
| P(16ms\_happy > 16ms\_neutral) | 1 |
| P(25ms\_happy > 25ms\_sad) | 1 |
| P(25ms\_happy > 25ms\_neutral) | 1 |
| P(141ms\_happy > 141ms\_sad) | 1 |
| P(141ms\_happy > 141ms\_neutral) | 1 |
| P(8ms\_happy > 16ms\_happy) | 0.06251256 |
| P(8ms\_happy > 25ms\_happy) | 5.03E-05 |
| P(8ms\_happy > 141ms\_happy) | 0 |
| P(16ms\_happy > 25ms\_happy) | 0.00080402 |
| P(16ms\_happy > 141ms\_happy) | 0 |
| P(25ms\_happy > 141ms\_happy) | 0 |
| P(8ms\_sad > 16ms\_sad) | 0.99939698 |
| P(8ms\_sad > 25ms\_sad) | 1 |
| P(8ms\_sad > 141ms\_sad) | 0 |
| P(16ms\_sad > 25ms\_sad) | 0.96346734 |
| P(16ms\_sad > 141ms\_sad) | 0 |
| P(25ms\_sad > 141ms\_sad) | 0 |
| P(8ms\_neutral > 16ms\_neutral) | 0.90668342 |
| P(8ms\_neutral > 25ms\_neutral) | 0.04703518 |
| P(8ms\_neutral > 141ms\_neutral) | 0 |
| P(16ms\_neutral > 25ms\_neutral) | 0 |
| P(16ms\_neutral > 141ms\_neutral) | 0 |
| P(25ms\_neutral > 141ms\_neutral) | 0 |

Model description

1. *Estimating drift-rate for emotion*

model\_stim **=** hddm**.**HDDM(data, p\_outlier**=**0.05,depends\_on**=**{'v': 'stim'})

model\_stim**.**find\_starting\_values()

model\_stim**.**sample(2000, burn**=**20)

1. *Estimating bias for emotion*

model\_stim\_bias **=** hddm**.**HDDM(data, bias**=True**, p\_outlier**=**0.05, depends\_on**=**{'z': 'stim'})

model\_stim\_bias**.**find\_starting\_values()

model\_stim\_bias**.**sample(100000, burn**=**500, thin**=**5)

models**.**append(model\_stim\_bias)

1. *Estimating drift-rate for timing conditions*

model\_level **=** hddm**.**HDDM(data, p\_outlier**=**0.05,depends\_on**=**{'v': 'level'})

model\_level**.**find\_starting\_values()

model\_level**.**sample(2000, burn**=**20)

1. *Estimating bias for timing conditions*

model\_level\_bias **=** hddm**.**HDDM(data, bias **=** **True**, p\_outlier**=**0.05, depends\_on**=**{'z': 'level'})

model\_level\_bias**.**find\_starting\_values()

model\_level\_bias**.**sample(100000, burn**=**500, thin**=**5)

1. *Estimating drift-rate for every timing x emotion condition*

m **=** hddm**.**HDDM(data, p\_outlier**=**0.05,depends\_on**=**{'v': 'conditions'})

m**.**find\_starting\_values()

m**.**sample(100000, burn**=**500, thin**=**5)

1. *Bias for every timing x emotion condition*

m\_bias **=** hddm**.**HDDM(data, bias**=** **True**, p\_outlier**=**0.05,depends\_on**=**{'z': 'conditions'})

m\_bias**.**find\_starting\_values()

m\_bias**.**sample(100000, burn**=**500, thin**=**5)

Specific model parameters can be found on [UnconsciousTiming/hddm\_model\_estimation.ipynb at main · JuliaSchraeder/UnconsciousTiming (github.com)](https://github.com/JuliaSchraeder/UnconsciousTiming/blob/main/hddm/hddm_model_estimation.ipynb)