# READ ME

Read me for the files
**(I)** *Kreis_et_al_2020_panss.csv* and
**(II)** *Kreis_et_al_2020_PT.model.pupil.csv*

**(I)** *Kreis_et_al_2020_panss.csv*

File includes calculated working memory, premorbid intelligence and symptom scores

| | |
|---|---|
| ID | Participant ID (randomly generated) |
| group | Group membership<br><br>Values:<br>SCZ for participants with a diagnosis from the schizophrenia spectrum<br>HC for participants without psychiatric diagnosis |
| PANSS.P | Sum scores of positive symptoms, measured with the Positive and Negative Symptoms Scale (PANSS; Kay et al., 1987) |
| PANSS.N.Gaag | Sum scores of negative symptoms, measured with the PANSS and calculated as suggested by van der Gaag et al. (2006) |
| WST | Sum scores of the German multiple choice vocabulary test ('Wortschatztest'; Lehrl et al., 1995) as a proxy for premorbid intelligence |
| WMC | Working memory capacity measured as maximum digit span, assed in a (forward) digit span task |

**(II)** *Kreis_et_al_2020_PT.model.pupil.csv*

File includes latent variables and parameters of the probabilistic prediction task, estimated with a Hidden Markov Model (HMM), and pupil size measures

| | |
|---|---|
| ID | Participant ID (randomly generated) |
| group | Group membership<br><br>Values:<br>SZ for participants with a diagnosis from the schizophrenia spectrum<br>HC for participants without psychiatric diagnosis |
| block | Task block: 1 = volatile, 2 = cued (changes announced) |
| trial | Trial number (1 – 160 for each block) |
| risk | Risk condition: low for 85:15/15:85 trials, high for 60:40/40:60 trials |
| p.left | Probability for the left-tilted stimulus (Gabor patch) to appear |
| HMM.Bsur | HMM – latent variable: Bayesian surprise signal, i.e. extent to which the internal model (belief about the state) should be updated on each trial |
| HMM.ent | HMM – latent variable: belief entropy, i.e. uncertainty about the hidden state on a given trial |
| HMM.gamma | HMM parameter: Transition probability gamma, i.e. subjective volatility |
| HMM.c | HMM parameter: sensitivity to positive feedback $c$, i.e. probability with which a correct prediction indicates that the true latent state indeed corresponds to the choice made |
| HMM.d | HMM parameter: sensitivity to negative feedback $d$, i.e. probability with which an incorrect prediction indicates that the latent state is *not* the one chosen by action $a$ |
| Pupil.BL | Baseline pupil size on a given trial: average of the z-scored pupil signal during the 500 ms preceding outcome onset |

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| BL.noise | Pupil size baseline noise on a given trial: standard deviation of the z-scored pupil signal during the 500 ms preceding outcome onset |
| Pupil.max | Maximum pupil dilation (baseline-corrected) during outcome presentation |
| excl.t | Indicates whether trial should be excluded from/treated as missing in pupil analyses: if yes, excl.t == 1 (too many missing data points) |

*Note*: Missing values (due to exclusion from model fitting or missing pupil data) are indicated as NA