**Compulsiveness drives evidence accumulation during ambiguity**

Alekhya Mandali1, Claire M Gillan2 and Valerie Voon1\*

1Department of Psychiatry, University of Cambridge, UK, 2Department of Psychology, Trinity College Dublin, Ireland

**\*Corresponding author:**

Dr. Valerie Voon

Department of Psychiatry

Addenbrooke’s Hospital

Level E4, Box 189

University of Cambridge

Cambridge CB2 0QQ

Email: voonval@gmail.com

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Table S1 lists the Bayesian factors (BF10) for post-hoc differences across all the conflict-uncertainty conditions for threshold and drift rate. BF10 >100 and \*\* indicates strong evidence for difference across conditions. ‘<’ indicates mean of parameter in column1 (conflict-uncertainty condition1) is less than the one in second column (conflict-uncertainty condition2) whereas ‘>’ indicates vice versa.

|  |  |  |  |
| --- | --- | --- | --- |
| Conflict -uncertainty condition1 | Conflict -uncertainty condition2 | Threshold (*a*) BF10 | Drift rate (*v*) BF10 |
| difficult-uncertain |  difficult-medium | <5.75 x 108\*\* | <1.846x 1091\*\* |
| difficult-certain | <1.95 x 1033\*\* | <2.36 x 1059\*\* |
| easy-medium | <3.5 x 1039\*\* | <4.47 x 10144\*\* |
| easy-certain | <9.96 x 1063\*\* | Very strong (beyond computer precision)\*\* |
| difficult-certain | difficult-medium | >1.67 x 1016\*\* | <7.33 x 107\*\* |
| easy-medium | >0.08 | <5.24 x 1012\*\* |
| easy-certain | <5.79 x1012\*\* | <3.73 x 10215\*\* |
| difficult-medium | easy-medium | <3.17 x108\*\* | <0.05 |
| easy-certain | <1.81 x1064\*\* | <1.39 x 10161\*\* |
| easy-medium | easy-certain | <2.75 x1010\*\* | <1.03 x 10161\*\* |

Table S2 lists the spearman correlations with significance calculated between Hierarchical drift diffusion model parameters and the three trans-diagnostic factors while controlling for age and IQ. \**p* <0.05, \*\**p<0.01*

|  |  |  |  |
| --- | --- | --- | --- |
| Condition  | Anxious-depression (factor 1) | Compulsive Behaviour and Intrusive Thought (factor 2) | Social withdrawal (factor 3) |
| Threshold (*a*) |
| difficult-uncertain | (*r* = 0.001, *p* =0.98) | (*r* = 0.05, *p* =0.04)\* | (*r* = -0.03, *p* =0.19) |
| difficult-medium | (*r* = -0.02, *p* =0.48 | (*r* = 0.04, *p* =0.13) | (*r* = -0.07, *p* =0.007)\*\* |
| difficult-certain | (*r* = -0.01, *p* =0.66) | (*r* = 0.03, *p* =0.28) | (*r* = -0.08, *p* =0.002)\*\* |
| easy-medium | (*r* = 0.005, *p* =0.85) | (*r* = 0.02, *p* =0.35) | (*r* = -0.07, *p* =0.007)\*\* |
| easy-certain | (*r* = 0.01, *p* =0.71) | (*r* = 0.03, *p* =0.27) | (*r* = -0.07, *p* =0.006)\*\* |
| Drift rate (*v*) |
| difficult-uncertain | (*r* = 0.01, *p* =0. 6) | (*r* = -0.01, *p* =0.71) | (*r* = 0.03, *p* =0.35) |
| difficult-medium | (*r* = 0.05, *p* <0.05)\* | (*r* = 0.01, *p* =0.58) | (*r* = 0.04, *p* =0.15) |
| difficult-certain | (*r* = 0.01, *p* =0.7) | (*r* = 0.03, *p* =0.24) | (*r* = 0.03, *p* =0.34) |
| easy-medium | (*r* = 0.003, *p* =0.92) | (*r* = -0.005, *p* =0.85) | (*r* = -0.02, *p* =0.41) |
| easy-certain | (*r* = 0.05, *p* < 0.05)\* | (*r* = -0.04, *p* =0.08) | (*r* = 0.03, *p* =0.25) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Condition  | LSAS | BIS | SDS | SCZ | AES |
| Threshold (*a*) |
| difficult-uncertain | (*r* = -0.03, *p* =0.32) | (*r* = 0.05, *p* =0.08) | (*r* = 0.02, *p* =0.5) | (*r* = 0.02, *p* =0.49) | (*r* = -0.007, *p* =0.8) |
| difficult-medium | (*r* = -0.06, *p* =0.03)\* | (*r* = 0.02, *p* =0.43) | (*r* = -0.02, *p* =0.4) | (*r* =- 0.008, *p* =0.78) | (*r* = -0.02, *p* =0.45) |
| difficult-certain | (*r* = -0.06, *p* =0.01)\* | (*r* = 0.03, *p* =0.25) | (*r* = -0.01, *p* =0.59) | (*r* = -0.01, *p* =0.63) | (*r* =- 0.01, *p* =0.66) |
| easy-medium | (*r* = -0.06, *p* =0.01)\* | (*r* = 0.03, *p* =0.26) | (*r* = 0.001, *p* =0.99) | (*r* = 0.006, *p* =0.83) | (*r* = -0.002, *p* =0.93) |
| easy-certain | (*r* = -0.06, *p* =0.03) | (*r* = 0.03, *p* =0.26) | (*r* = -0.005, *p* =0.86) | (*r* = 0.002, *p* =0.94) | (*r* = 0.006, *p* =0.83) |
| Drift rate (*v*) |
| difficult-uncertain | (*r* = 0.02, *p* =0.45) | (*r* = -0.04, *p* =0.14) | (*r* = 0.02, *p* =0.43) | (*r* = 0.006, *p* =0.82) | (*r* = -0.008, *p* =0.77) |
| difficult-medium | (*r* = 0.03, *p* =0.19) | (*r* = -0.008, *p* =0.76) | (*r* = 0.03, *p* =0.3) | (*r* = 0.04, *p* =0.08) | (*r* = 0.03, *p* =0.18) |
| difficult-certain | (*r* = 0.02, *p* =0.5) | (*r* = -0.009, *p* =0.73) | (*r* = 0.01, *p* =0.62) | (*r* = 0.016, *p* =0.55) | (*r* = 0.02, *p* =0.46) |
| easy-medium | (*r* = -0.03, *p* =0.33) | (*r* = -0.002, *p* =0.94) | (*r* = -0.02, *p* =0.49) | (*r* = 0.004, *p* =0.88) | (*r* = -0.01, *p* =0.61) |
| easy-certain | (*r* = 0.03, *p* = 0.35) | (*r* = 0.006, *p* =0.82) | (*r* = 0.02, *p* =0.38) | (*r* = 0.01, *p* =0.65) | (*r* = 0.03, *p* =0.33) |

Table S3 shows the correlation between each of the 9 psychological measures and the hierarchical drift diffusion estimates in all conflict-uncertainty conditions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Condition  | STAI | EAT | AUDIT | OCI-R |
| Threshold (*a*) |
| difficult-uncertain | (*r* = -0.003, *p* =0.92) | (*r* = 0.02, *p* =0.47) | (*r* = 0.03, *p* =0.29) | (*r* = 0.04, *p* =0.16) |
| difficult-medium | (*r* = -0.02, *p* =0.38) | (*r* = -0.02, *p* =0.45) | (*r* = 0.08, *p* =0.001)\*\* | (*r* = 0.02, *p* =0.38) |
| difficult-certain | (*r* = -0.03, *p* =0.23) | ( *r* = -0.01, *p* =0.72) | (*r* = 0.07, *p* =0.004)\*\* | (*r* = 0.006, *p* =0.83) |
| easy-medium | (*r* = -0.008, *p* =0.76) | (*r* = 0.03, *p* =0.31) | (*r* = 0.06, *p* =0.03)\* | (*r* = 0.01, *p* =0.68) |
| easy-certain | (*r* = -0.006, *p* =0.83) | (*r* = -0.01, *p* =0.61) | (*r* = 0.09, *p* =0.001)\*\* | (*r* = 0.01, *p* =0.56) |
| Drift rate (*v*) |
| difficult-uncertain | (*r* = 0.02, *p* =0.38) | (*r* = -0.003, *p* =0.91) | (*r* = 0.01, *p* =0.59) | (*r* = 0.008, *p* =0.76) |
| difficult-medium | (*r* = 0.05, *p* =0.05) | (*r* = 0.007, *p* =0.81) | (*r* = 0.01, *p* =0.66) | (*r* = 0.02, *p* =0.35) |
| difficult-certain | (*r* = 0.02, *p* =0.29) | (*r* = 0.003, *p* =0.9) | (*r* = -0.005, *p* =0.86) | (*r* = 0.03, *p* =0.17) |
| easy-medium | (*r* = -0.01, *p* =0.61) | (*r* = 0.001, *p* =0.96) | (*r* = -0.02, *p* =0.32) | (*r* = 0.001, *p* =0.97) |
| easy-certain | (*r* = 0.04, *p* = 0.09) | (*r* = -0.01, *p* =0.69) | (*r* = -0.02, *p* =0.37) | (*r* = -0.07, *p* =0.01)\* |

Abbreviations: OCI-R: Obsessive-Compulsive Inventory – Revised, SDS: Self-Rating Depression Scale, STAI: trait portion of the State-Trait Anxiety Inventory, AUDIT: Alcohol Use Disorder Identification Test, AES: Apathy Evaluation Scale, EAT: eating disorders using the Eating Attitudes Test, BIS: Barratt Impulsivity Scale, SCZ: Short Scales for Measuring Schizotypy and LSAS: Liebowitz Social Anxiety Scale