

# Supplementary Material

## Working Memory Anxiety and Cognitive Efficiency under Task Complexity Using Eye Tracking and Physiological Arousal

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This supplement contains two kinds of material referenced in the main manuscript. First, Tables S1–S2 report descriptive statistics (estimated marginal means and standard errors) for the Arithmetic Visual Task (AVT) and Stroop Visual Search Task (SVST) at each of the three complexity levels, across the four AnxWM groups; these complement Tables 4–5 of the main manuscript, which report the corresponding inferential statistics (omnibus  $F$ ,  $p$ ,  $q_{FDR}$ ) but not the level-by-level descriptive means. Second, Tables S3–S9 report the full Bonferroni-corrected post-hoc pairwise group comparisons referenced in the main manuscript (Sections 3.1.1, 3.1.2, 3.2.1, 3.2.2). Descriptive means and standard errors for the Baseline Visual Task (BVT) and Dual n-Back (DnB) are reported directly in the main manuscript (Tables 2–3) and are not repeated here.

**Table S1. Arithmetic Visual Task (AVT): Descriptive Statistics by Complexity Level**

Table 1: Estimated marginal means (EMMs) and standard errors (SE) for the AVT across AnxWM groups. LAHW = Low Anxiety–High WM; LALW = Low Anxiety–Low WM; HALW = High Anxiety–Low WM; HAHW = High Anxiety–High WM. Values are  $M \pm SE$  for eye-tracking and EDA metrics across all task levels and groups.

| Metric             | Level | LAHW                  | LALW                   | HALW                   | HAHW                   |
|--------------------|-------|-----------------------|------------------------|------------------------|------------------------|
| TCT                | 1     | 63.64 $\pm$ 2.85      | 71.45 $\pm$ 2.91       | 87.15 $\pm$ 3.38       | 71.50 $\pm$ 3.30       |
|                    | 2     | 88.56 $\pm$ 5.09      | 99.53 $\pm$ 5.19       | 119.39 $\pm$ 6.02      | 98.02 $\pm$ 5.88       |
|                    | 3     | 123.57 $\pm$ 7.85     | 134.64 $\pm$ 7.99      | 172.66 $\pm$ 9.29      | 134.87 $\pm$ 9.06      |
| TTFF               | 1     | 59.78 $\pm$ 3.85      | 71.22 $\pm$ 3.92       | 86.12 $\pm$ 4.55       | 65.65 $\pm$ 4.44       |
|                    | 2     | 80.55 $\pm$ 7.14      | 99.50 $\pm$ 7.27       | 113.88 $\pm$ 8.45      | 94.32 $\pm$ 8.24       |
|                    | 3     | 103.28 $\pm$ 10.51    | 134.50 $\pm$ 10.71     | 166.13 $\pm$ 12.44     | 133.42 $\pm$ 12.14     |
| TFD                | 1     | 1481.27 $\pm$ 171.82  | 1997.65 $\pm$ 174.98   | 2356.06 $\pm$ 203.30   | 1884.36 $\pm$ 198.40   |
|                    | 2     | 2396.71 $\pm$ 363.24  | 3446.85 $\pm$ 369.91   | 4488.38 $\pm$ 429.79   | 2793.70 $\pm$ 419.43   |
|                    | 3     | 3233.92 $\pm$ 560.16  | 4464.74 $\pm$ 570.44   | 6425.78 $\pm$ 662.79   | 3672.65 $\pm$ 646.82   |
| NOF                | 1     | 4449.96 $\pm$ 410.60  | 5371.04 $\pm$ 418.13   | 6618.59 $\pm$ 485.83   | 5747.76 $\pm$ 474.12   |
|                    | 2     | 6854.71 $\pm$ 623.39  | 8536.07 $\pm$ 634.83   | 9406.52 $\pm$ 737.60   | 7617.24 $\pm$ 719.83   |
|                    | 3     | 9512.61 $\pm$ 1008.10 | 11169.63 $\pm$ 1026.60 | 14627.80 $\pm$ 1192.80 | 10498.33 $\pm$ 1164.06 |
| TSD                | 1     | 4213.96 $\pm$ 390.36  | 4880.89 $\pm$ 397.52   | 7251.72 $\pm$ 473.88   | 5555.91 $\pm$ 450.75   |
|                    | 2     | 6203.68 $\pm$ 574.40  | 7077.26 $\pm$ 584.95   | 8747.32 $\pm$ 697.30   | 7146.76 $\pm$ 663.27   |
|                    | 3     | 9169.39 $\pm$ 887.96  | 9082.37 $\pm$ 904.25   | 13938.84 $\pm$ 1077.94 | 9629.41 $\pm$ 1025.32  |
| PSV                | 1     | 24.24 $\pm$ 2.21      | 17.69 $\pm$ 2.25       | 22.99 $\pm$ 2.69       | 20.98 $\pm$ 2.55       |
|                    | 2     | 24.37 $\pm$ 2.47      | 18.27 $\pm$ 2.51       | 29.62 $\pm$ 3.00       | 30.30 $\pm$ 2.85       |
|                    | 3     | 37.28 $\pm$ 3.61      | 24.67 $\pm$ 3.68       | 32.35 $\pm$ 4.39       | 34.04 $\pm$ 4.17       |
| MPD                | 1     | 2.827 $\pm$ 0.068     | 2.791 $\pm$ 0.070      | 2.839 $\pm$ 0.083      | 2.768 $\pm$ 0.079      |
|                    | 2     | 2.824 $\pm$ 0.069     | 2.775 $\pm$ 0.070      | 2.816 $\pm$ 0.084      | 2.785 $\pm$ 0.080      |
|                    | 3     | 2.930 $\pm$ 0.070     | 2.869 $\pm$ 0.072      | 2.888 $\pm$ 0.085      | 2.874 $\pm$ 0.081      |
| Mean EDA           | 1     | 590.43 $\pm$ 48.98    | 726.33 $\pm$ 49.88     | 940.03 $\pm$ 57.95     | 768.42 $\pm$ 56.55     |
|                    | 2     | 919.14 $\pm$ 78.69    | 1172.33 $\pm$ 80.13    | 1359.24 $\pm$ 93.11    | 1073.24 $\pm$ 90.86    |
|                    | 3     | 1280.64 $\pm$ 135.10  | 1524.04 $\pm$ 137.58   | 1997.00 $\pm$ 159.85   | 1559.00 $\pm$ 156.00   |
| EDA Proportion     | 1     | 1.101 $\pm$ 0.140     | 1.028 $\pm$ 0.142      | 1.037 $\pm$ 0.165      | 1.360 $\pm$ 0.161      |
|                    | 2     | 1.183 $\pm$ 0.147     | 1.101 $\pm$ 0.150      | 1.124 $\pm$ 0.174      | 1.491 $\pm$ 0.170      |
|                    | 3     | 1.544 $\pm$ 0.187     | 1.235 $\pm$ 0.190      | 1.213 $\pm$ 0.221      | 1.956 $\pm$ 0.216      |
| Mean EDA Amplitude | 1     | 1.684 $\pm$ 0.304     | 2.081 $\pm$ 0.309      | 1.356 $\pm$ 0.359      | 1.409 $\pm$ 0.351      |

| Metric | Level | LAHW              | LALW              | HALW              | HAHW              |
|--------|-------|-------------------|-------------------|-------------------|-------------------|
|        | 2     | 1.916 $\pm$ 0.326 | 2.161 $\pm$ 0.332 | 1.467 $\pm$ 0.386 | 1.522 $\pm$ 0.377 |
|        | 3     | 2.216 $\pm$ 0.345 | 2.343 $\pm$ 0.352 | 1.513 $\pm$ 0.409 | 1.882 $\pm$ 0.399 |

**Table S2. Stroop Visual Search Task (SVST): Descriptive Statistics by Complexity Level**

Table 2: Estimated marginal means (EMMs) and standard errors (SE) for the SVST across AnxWM groups. Same group labels as Table A1.

| Metric             | Level | LAHW                   | LALW                    | HALW                     | HAHW                    |
|--------------------|-------|------------------------|-------------------------|--------------------------|-------------------------|
| TCT                | 1     | 70.04 $\pm$ 2.15       | 91.41 $\pm$ 3.24        | 80.86 $\pm$ 2.54         | 80.56 $\pm$ 2.51        |
|                    | 2     | 85.78 $\pm$ 2.15       | 107.17 $\pm$ 3.24       | 130.71 $\pm$ 2.54        | 89.08 $\pm$ 2.51        |
|                    | 3     | 88.61 $\pm$ 2.15       | 103.57 $\pm$ 3.24       | 107.65 $\pm$ 2.54        | 85.91 $\pm$ 2.51        |
| TTFF               | 1     | 65.13 $\pm$ 5.69       | 91.41 $\pm$ 5.79        | 79.84 $\pm$ 6.73         | 74.63 $\pm$ 6.57        |
|                    | 2     | 79.88 $\pm$ 8.92       | 106.83 $\pm$ 9.09       | 130.64 $\pm$ 10.56       | 85.12 $\pm$ 10.30       |
|                    | 3     | 82.24 $\pm$ 6.68       | 103.57 $\pm$ 6.80       | 107.49 $\pm$ 7.90        | 78.75 $\pm$ 7.71        |
| TFD                | 1     | 1345.632 $\pm$ 171.139 | 2171.233 $\pm$ 174.279  | 1917.301 $\pm$ 202.494   | 1691.674 $\pm$ 197.614  |
|                    | 2     | 1948.052 $\pm$ 279.816 | 2562.964 $\pm$ 284.950  | 3510.376 $\pm$ 331.082   | 2237.396 $\pm$ 323.103  |
|                    | 3     | 1926.746 $\pm$ 200.858 | 2438.084 $\pm$ 204.544  | 2498.588 $\pm$ 237.659   | 1888.703 $\pm$ 231.931  |
| NOF                | 1     | 5038.857 $\pm$ 537.992 | 7658.926 $\pm$ 547.864  | 6351.450 $\pm$ 636.561   | 6206.538 $\pm$ 621.220  |
|                    | 2     | 6912.536 $\pm$ 840.131 | 8904.000 $\pm$ 855.547  | 10658.326 $\pm$ 994.056  | 7850.429 $\pm$ 970.100  |
|                    | 3     | 6938.429 $\pm$ 650.361 | 8764.037 $\pm$ 662.295  | 8848.039 $\pm$ 769.517   | 6621.359 $\pm$ 750.972  |
| TSD                | 1     | 5924.286 $\pm$ 582.325 | 9124.074 $\pm$ 593.011  | 7223.450 $\pm$ 689.017   | 7330.911 $\pm$ 672.411  |
|                    | 2     | 8004.679 $\pm$ 858.899 | 10328.519 $\pm$ 874.660 | 11443.446 $\pm$ 1016.263 | 8865.116 $\pm$ 991.771  |
|                    | 3     | 8319.893 $\pm$ 883.966 | 10618.333 $\pm$ 900.187 | 12641.700 $\pm$ 1045.923 | 8335.857 $\pm$ 1020.716 |
| PSV                | 1     | 21.333 $\pm$ 2.252     | 21.492 $\pm$ 2.293      | 24.311 $\pm$ 2.665       | 19.983 $\pm$ 2.600      |
|                    | 2     | 24.035 $\pm$ 3.174     | 26.082 $\pm$ 3.232      | 33.034 $\pm$ 3.755       | 22.955 $\pm$ 3.665      |
|                    | 3     | 26.042 $\pm$ 3.101     | 25.298 $\pm$ 3.158      | 30.727 $\pm$ 3.670       | 33.114 $\pm$ 3.581      |
| MPD                | 1     | 2.830 $\pm$ 0.077      | 2.804 $\pm$ 0.079       | 2.842 $\pm$ 0.091        | 2.796 $\pm$ 0.089       |
|                    | 2     | 2.801 $\pm$ 0.074      | 2.788 $\pm$ 0.076       | 2.823 $\pm$ 0.088        | 2.756 $\pm$ 0.086       |
|                    | 3     | 2.906 $\pm$ 0.076      | 2.868 $\pm$ 0.078       | 2.896 $\pm$ 0.090        | 2.882 $\pm$ 0.088       |
| Mean EDA           | 1     | 644.607 $\pm$ 68.427   | 1036.407 $\pm$ 69.682   | 880.350 $\pm$ 80.964     | 829.468 $\pm$ 79.012    |
|                    | 2     | 894.393 $\pm$ 108.275  | 1210.074 $\pm$ 110.262  | 1461.452 $\pm$ 128.112   | 1063.952 $\pm$ 125.025  |
|                    | 3     | 920.929 $\pm$ 85.290   | 1200.741 $\pm$ 86.855   | 1231.440 $\pm$ 100.917   | 933.810 $\pm$ 98.485    |
| EDA Proportion     | 1     | 0.761 $\pm$ 0.117      | 0.544 $\pm$ 0.119       | 0.656 $\pm$ 0.138        | 0.957 $\pm$ 0.135       |
|                    | 2     | 0.789 $\pm$ 0.118      | 0.592 $\pm$ 0.120       | 0.727 $\pm$ 0.140        | 0.916 $\pm$ 0.136       |
|                    | 3     | 0.995 $\pm$ 0.124      | 0.742 $\pm$ 0.127       | 0.872 $\pm$ 0.147        | 1.172 $\pm$ 0.143       |
| Mean EDA Amplitude | 1     | 1.089 $\pm$ 0.184      | 0.942 $\pm$ 0.188       | 0.924 $\pm$ 0.218        | 0.882 $\pm$ 0.213       |
|                    | 2     | 1.123 $\pm$ 0.213      | 1.063 $\pm$ 0.217       | 0.973 $\pm$ 0.252        | 1.064 $\pm$ 0.246       |
|                    | 3     | 1.496 $\pm$ 0.252      | 1.347 $\pm$ 0.256       | 1.182 $\pm$ 0.298        | 1.424 $\pm$ 0.291       |

**Table S3. Phase 1 (BVT, DnB): All Pairwise Comparisons**

All pairwise comparisons below use independent-samples  $t$  tests with Bonferroni-adjusted  $p$  values, consistent with the post-hoc procedure specified in the main manuscript's Statistical Analyses section (Section 2.6). Post-hoc tests were run only for measures with a significant omnibus effect after FDR correction. Bold rows indicate  $p_{\text{Bonf}} < .05$ . Hedges'  $g$  is reported as a standardised effect size.

Table 3: Post-hoc pairwise comparisons, Phase 1, for all measures with a significant Group omnibus effect (Tables 2–3 of the main manuscript).

| Task       | Measure              | Comparison          | Diff           | $SE$          | $t$          | $df$        | $p_{\text{Bonf}}$ | Hedges' $g$  |
|------------|----------------------|---------------------|----------------|---------------|--------------|-------------|-------------------|--------------|
| BVT        | TCT                  | HAHW vs HALW        | -10.91         | 4.19          | -2.61        | 30.1        | 0.085             | -0.81        |
| BVT        | TCT                  | HAHW vs LAHW        | 6.55           | 2.44          | 2.68         | 35.2        | 0.067             | 0.79         |
| BVT        | TCT                  | HAHW vs LALW        | 1.45           | 2.50          | 0.58         | 37.2        | 1.000             | 0.17         |
| <b>BVT</b> | <b>TCT</b>           | <b>HALW vs LAHW</b> | <b>17.46</b>   | <b>3.88</b>   | <b>4.50</b>  | <b>24.0</b> | <b>&lt;.001</b>   | <b>1.46</b>  |
| <b>BVT</b> | <b>TCT</b>           | <b>HALW vs LALW</b> | <b>12.36</b>   | <b>3.92</b>   | <b>3.16</b>  | <b>24.8</b> | <b>0.025</b>      | <b>1.01</b>  |
| BVT        | TCT                  | LAHW vs LALW        | -5.10          | 1.94          | -2.63        | 52.5        | 0.067             | -0.70        |
| BVT        | TTFE                 | HAHW vs HALW        | -13.62         | 5.37          | -2.54        | 39.0        | 0.092             | -0.78        |
| BVT        | TTFE                 | HAHW vs LAHW        | 6.84           | 4.90          | 1.40         | 40.2        | 1.000             | 0.40         |
| BVT        | TTFE                 | HAHW vs LALW        | -1.59          | 4.14          | -0.38        | 25.4        | 1.000             | -0.12        |
| <b>BVT</b> | <b>TTFE</b>          | <b>HALW vs LAHW</b> | <b>20.46</b>   | <b>4.76</b>   | <b>4.30</b>  | <b>39.9</b> | <b>&lt;.001</b>   | <b>1.25</b>  |
| <b>BVT</b> | <b>TTFE</b>          | <b>HALW vs LALW</b> | <b>12.03</b>   | <b>3.97</b>   | <b>3.03</b>  | <b>24.7</b> | <b>0.034</b>      | <b>0.97</b>  |
| BVT        | TTFE                 | LAHW vs LALW        | -8.43          | 3.31          | -2.55        | 38.6        | 0.090             | -0.67        |
| BVT        | NOF                  | HAHW vs HALW        | -748.41        | 510.13        | -1.47        | 27.5        | 0.922             | -0.46        |
| BVT        | NOF                  | HAHW vs LAHW        | 743.48         | 275.52        | 2.70         | 38.9        | 0.061             | 0.79         |
| BVT        | NOF                  | HAHW vs LALW        | 171.28         | 291.97        | 0.59         | 42.4        | 1.000             | 0.17         |
| <b>BVT</b> | <b>NOF</b>           | <b>HALW vs LAHW</b> | <b>1491.89</b> | <b>487.16</b> | <b>3.06</b>  | <b>23.8</b> | <b>0.032</b>      | <b>0.99</b>  |
| BVT        | NOF                  | HALW vs LALW        | 919.68         | 496.65        | 1.85         | 25.5        | 0.454             | 0.59         |
| BVT        | NOF                  | LAHW vs LALW        | -572.20        | 249.69        | -2.29        | 51.5        | 0.156             | -0.61        |
| BVT        | TSD                  | HAHW vs HALW        | -724.22        | 538.65        | -1.34        | 30.2        | 1.000             | -0.42        |
| BVT        | TSD                  | HAHW vs LAHW        | 849.23         | 324.53        | 2.62         | 37.7        | 0.076             | 0.77         |
| BVT        | TSD                  | HAHW vs LALW        | 506.77         | 318.72        | 1.59         | 36.0        | 0.723             | 0.47         |
| <b>BVT</b> | <b>TSD</b>           | <b>HALW vs LAHW</b> | <b>1573.45</b> | <b>504.17</b> | <b>3.12</b>  | <b>25.0</b> | <b>0.027</b>      | <b>1.00</b>  |
| BVT        | TSD                  | HALW vs LALW        | 1230.99        | 500.45        | 2.46         | 24.4        | 0.128             | 0.79         |
| BVT        | TSD                  | LAHW vs LALW        | -342.46        | 256.18        | -1.34        | 52.9        | 1.000             | -0.35        |
| BVT        | EDA Responses        | HAHW vs HALW        | -141.69        | 73.97         | -1.92        | 28.1        | 0.394             | -0.60        |
| BVT        | EDA Responses        | HAHW vs LAHW        | 99.20          | 38.71         | 2.56         | 33.6        | 0.090             | 0.77         |
| BVT        | EDA Responses        | HAHW vs LALW        | 37.25          | 40.74         | 0.91         | 37.8        | 1.000             | 0.27         |
| <b>BVT</b> | <b>EDA Responses</b> | <b>HALW vs LAHW</b> | <b>240.89</b>  | <b>69.01</b>  | <b>3.49</b>  | <b>22.5</b> | <b>0.012</b>      | <b>1.14</b>  |
| BVT        | EDA Responses        | HALW vs LALW        | 178.94         | 70.17         | 2.55         | 23.9        | 0.106             | 0.82         |
| BVT        | EDA Responses        | LAHW vs LALW        | -61.95         | 30.83         | -2.01        | 52.0        | 0.298             | -0.54        |
| <b>DnB</b> | <b>TTFE</b>          | <b>HAHW vs HALW</b> | <b>69.54</b>   | <b>20.00</b>  | <b>3.48</b>  | <b>35.4</b> | <b>0.008</b>      | <b>1.06</b>  |
| DnB        | TTFE                 | HAHW vs LAHW        | -15.22         | 19.61         | -0.78        | 36.0        | 1.000             | -0.23        |
| <b>DnB</b> | <b>TTFE</b>          | <b>HAHW vs LALW</b> | <b>77.58</b>   | <b>18.14</b>  | <b>4.28</b>  | <b>28.9</b> | <b>0.001</b>      | <b>1.31</b>  |
| <b>DnB</b> | <b>TTFE</b>          | <b>HALW vs LAHW</b> | <b>-84.75</b>  | <b>15.73</b>  | <b>-5.39</b> | <b>43.5</b> | <b>&lt;.001</b>   | <b>-1.52</b> |
| DnB        | TTFE                 | HALW vs LALW        | 8.04           | 13.86         | 0.58         | 35.1        | 1.000             | 0.17         |
| <b>DnB</b> | <b>TTFE</b>          | <b>LAHW vs LALW</b> | <b>92.79</b>   | <b>13.29</b>  | <b>6.98</b>  | <b>48.7</b> | <b>&lt;.001</b>   | <b>1.85</b>  |

| Task       | Measure               | Comparison          | Diff            | <i>SE</i>      | <i>t</i>     | <i>df</i>   | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|------------|-----------------------|---------------------|-----------------|----------------|--------------|-------------|--------------------------|------------------|
| <b>DnB</b> | <b>NOF</b>            | <b>HAHW vs HALW</b> | <b>4724.07</b>  | <b>1674.91</b> | <b>2.82</b>  | <b>38.6</b> | <b>0.045</b>             | <b>0.86</b>      |
| DnB        | NOF                   | HAHW vs LAHW        | -1718.99        | 1736.90        | -0.99        | 45.1        | 1.000                    | -0.28            |
| <b>DnB</b> | <b>NOF</b>            | <b>HAHW vs LALW</b> | <b>4851.19</b>  | <b>1548.98</b> | <b>3.13</b>  | <b>38.0</b> | <b>0.020</b>             | <b>0.92</b>      |
| <b>DnB</b> | <b>NOF</b>            | <b>HALW vs LAHW</b> | <b>-6443.06</b> | <b>1626.61</b> | <b>-3.96</b> | <b>45.6</b> | <b>0.002</b>             | <b>-1.09</b>     |
| DnB        | NOF                   | HALW vs LALW        | 127.12          | 1424.21        | 0.09         | 39.8        | 1.000                    | 0.03             |
| <b>DnB</b> | <b>NOF</b>            | <b>LAHW vs LALW</b> | <b>6570.18</b>  | <b>1496.62</b> | <b>4.39</b>  | <b>49.7</b> | <b>&lt;.001</b>          | <b>1.16</b>      |
| DnB        | TSD                   | HAHW vs HALW        | 3855.88         | 1467.10        | 2.63         | 38.5        | 0.074                    | 0.80             |
| DnB        | TSD                   | HAHW vs LAHW        | -541.08         | 1415.01        | -0.38        | 41.2        | 1.000                    | -0.11            |
| <b>DnB</b> | <b>TSD</b>            | <b>HAHW vs LALW</b> | <b>5061.22</b>  | <b>1269.93</b> | <b>3.99</b>  | <b>32.2</b> | <b>0.002</b>             | <b>1.20</b>      |
| <b>DnB</b> | <b>TSD</b>            | <b>HALW vs LAHW</b> | <b>-4396.96</b> | <b>1306.44</b> | <b>-3.37</b> | <b>43.0</b> | <b>0.010</b>             | <b>-0.96</b>     |
| DnB        | TSD                   | HALW vs LALW        | 1205.34         | 1147.71        | 1.05         | 33.9        | 1.000                    | 0.32             |
| <b>DnB</b> | <b>TSD</b>            | <b>LAHW vs LALW</b> | <b>5602.31</b>  | <b>1080.33</b> | <b>5.19</b>  | <b>48.2</b> | <b>&lt;.001</b>          | <b>1.37</b>      |
| <b>DnB</b> | <b>PSV</b>            | <b>HAHW vs HALW</b> | <b>18.60</b>    | <b>6.05</b>    | <b>3.08</b>  | <b>28.0</b> | <b>0.028</b>             | <b>0.93</b>      |
| DnB        | PSV                   | HAHW vs LAHW        | 0.91            | 7.00           | 0.13         | 40.8        | 1.000                    | 0.04             |
| DnB        | PSV                   | HAHW vs LALW        | 14.07           | 7.15           | 1.97         | 41.8        | 0.335                    | 0.57             |
| <b>DnB</b> | <b>PSV</b>            | <b>HALW vs LAHW</b> | <b>-17.70</b>   | <b>5.01</b>    | <b>-3.53</b> | <b>41.6</b> | <b>0.006</b>             | <b>-0.92</b>     |
| DnB        | PSV                   | HALW vs LALW        | -4.54           | 5.22           | -0.87        | 39.3        | 1.000                    | -0.23            |
| DnB        | PSV                   | LAHW vs LALW        | 13.16           | 6.29           | 2.09         | 52.7        | 0.249                    | 0.56             |
| <b>DnB</b> | <b>EDA Responses</b>  | <b>HAHW vs HALW</b> | <b>662.34</b>   | <b>208.54</b>  | <b>3.18</b>  | <b>37.4</b> | <b>0.018</b>             | <b>0.97</b>      |
| DnB        | EDA Responses         | HAHW vs LAHW        | -42.82          | 223.28         | -0.19        | 44.7        | 1.000                    | -0.05            |
| <b>DnB</b> | <b>EDA Responses</b>  | <b>HAHW vs LALW</b> | <b>720.67</b>   | <b>199.51</b>  | <b>3.61</b>  | <b>37.4</b> | <b>0.005</b>             | <b>1.06</b>      |
| <b>DnB</b> | <b>EDA Responses</b>  | <b>HALW vs LAHW</b> | <b>-705.16</b>  | <b>199.63</b>  | <b>-3.53</b> | <b>46.0</b> | <b>0.006</b>             | <b>-0.96</b>     |
| DnB        | EDA Responses         | HALW vs LALW        | 58.34           | 172.64         | 0.34         | 41.7        | 1.000                    | 0.10             |
| <b>DnB</b> | <b>EDA Responses</b>  | <b>LAHW vs LALW</b> | <b>763.50</b>   | <b>190.19</b>  | <b>4.01</b>  | <b>49.7</b> | <b>0.001</b>             | <b>1.06</b>      |
| <b>DnB</b> | <b>EDA Proportion</b> | <b>HAHW vs HALW</b> | <b>0.97</b>     | <b>0.29</b>    | <b>3.39</b>  | <b>34.4</b> | <b>0.010</b>             | <b>1.03</b>      |
| DnB        | EDA Proportion        | HAHW vs LAHW        | 0.71            | 0.26           | 2.69         | 28.8        | 0.070                    | 0.83             |
| DnB        | EDA Proportion        | HAHW vs LALW        | 0.37            | 0.34           | 1.08         | 44.6        | 1.000                    | 0.31             |
| DnB        | EDA Proportion        | HALW vs LAHW        | -0.26           | 0.20           | -1.36        | 34.4        | 1.000                    | -0.41            |
| DnB        | EDA Proportion        | HALW vs LALW        | -0.60           | 0.29           | -2.08        | 40.8        | 0.265                    | -0.57            |
| DnB        | EDA Proportion        | LAHW vs LALW        | -0.34           | 0.27           | -1.27        | 35.3        | 1.000                    | -0.35            |

<sup>†</sup>Reported *p*<sub>Bonf</sub> < .001; underlying *t*-test *p*<sub>unc</sub> < .0001.

## Table S4. Tonic and Phasic EDA: BVT Pairwise Comparisons

Tonic skin conductance level (Tonic SCL) and phasic activity (Phasic AUC) were extracted for the BVT and analysed with the same one-way ANOVA/Welch's ANOVA framework used elsewhere (main text, Section 2.5.2/3.1.1), as part of a separate 16-test FDR family covering both single-timepoint and multi-level tasks. Tonic SCL showed a significant AnxWM Group effect (standard ANOVA,  $F(3, 92) = 5.96$ ,  $p < .001$ ,  $q_{FDR} = .003$ ); Phasic AUC did not ( $F(3, 92) = 1.07$ ,  $p = .364$ ,  $q_{FDR} = .449$ ). Bonferroni-corrected pairwise comparisons are reported below for both measures.

Table 4: BVT tonic/phasic pairwise comparisons (Bonferroni-corrected).

| Measure               | Comparison          | <i>t</i>     | <i>df</i> | <i>p</i> <sub>unc</sub> | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-----------------------|---------------------|--------------|-----------|-------------------------|--------------------------|------------------|
| Tonic SCL Mean        | HAHW vs HALW        | -1.595       | 92        | .119                    | 1.000                    | -0.486           |
| Tonic SCL Mean        | HAHW vs LAHW        | 1.829        | 92        | .074                    | 0.447                    | 0.522            |
| Tonic SCL Mean        | HAHW vs LALW        | 1.707        | 92        | .098                    | 0.588                    | 0.527            |
| <b>Tonic SCL Mean</b> | <b>HALW vs LAHW</b> | <b>3.270</b> | <b>92</b> | <b>.002</b>             | <b>0.014</b>             | <b>0.954</b>     |

| Measure               | Comparison          | <i>t</i>     | <i>df</i> | <i>p</i> <sub>unc</sub> | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-----------------------|---------------------|--------------|-----------|-------------------------|--------------------------|------------------|
| <b>Tonic SCL Mean</b> | <b>HALW vs LALW</b> | <b>3.307</b> | <b>92</b> | <b>.003</b>             | <b>0.016</b>             | <b>1.020</b>     |
| Tonic SCL Mean        | LAHW vs LALW        | -0.469       | 92        | .641                    | 1.000                    | -0.124           |
| Phasic AUC            | HAHW vs HALW        | -1.279       | 92        | .209                    | 1.000                    | -0.392           |
| Phasic AUC            | HAHW vs LAHW        | -1.687       | 92        | .099                    | 0.593                    | -0.441           |
| Phasic AUC            | HAHW vs LALW        | -1.699       | 92        | .098                    | 0.586                    | -0.444           |
| Phasic AUC            | HALW vs LAHW        | -0.765       | 92        | .449                    | 1.000                    | -0.199           |
| Phasic AUC            | HALW vs LALW        | -0.912       | 92        | .368                    | 1.000                    | -0.239           |
| Phasic AUC            | LAHW vs LALW        | -0.226       | 92        | .822                    | 1.000                    | -0.060           |

**Table S5. Tonic and Phasic EDA: DnB Pairwise Comparisons**

Phasic AUC showed a significant AnxWM Group effect on the DnB (Welch's ANOVA,  $F(3, 36.7) = 8.24$ ,  $p < .001$ ,  $q_{FDR} = .001$ ); Tonic SCL did not survive correction ( $F(3, 92) = 3.26$ ,  $p = .025$ ,  $q_{FDR} = .057$ ).

Table 5: DnB tonic/phasic pairwise comparisons (Bonferroni-corrected).

| Measure               | Comparison          | <i>t</i>     | <i>df</i>   | <i>p</i> <sub>unc</sub> | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-----------------------|---------------------|--------------|-------------|-------------------------|--------------------------|------------------|
| Tonic SCL Mean        | HAHW vs HALW        | -0.772       | 92          | .446                    | 1.000                    | -0.238           |
| Tonic SCL Mean        | HAHW vs LAHW        | 1.976        | 92          | .060                    | 0.358                    | 0.639            |
| Tonic SCL Mean        | HAHW vs LALW        | 0.433        | 92          | .668                    | 1.000                    | 0.127            |
| <b>Tonic SCL Mean</b> | <b>HALW vs LAHW</b> | <b>3.663</b> | <b>92</b>   | <b>.001</b>             | <b>0.006</b>             | <b>1.121</b>     |
| Tonic SCL Mean        | HALW vs LALW        | 1.397        | 92          | .169                    | 1.000                    | 0.392            |
| Tonic SCL Mean        | LAHW vs LALW        | -1.803       | 92          | .079                    | 0.477                    | -0.485           |
| Phasic AUC            | HAHW vs HALW        | -0.065       | 36.7        | .949                    | 1.000                    | -0.020           |
| <b>Phasic AUC</b>     | <b>HAHW vs LAHW</b> | <b>3.265</b> | <b>36.7</b> | <b>.004</b>             | <b>0.024</b>             | <b>1.113</b>     |
| Phasic AUC            | HAHW vs LALW        | 2.044        | 36.7        | .051                    | 0.308                    | 0.651            |
| <b>Phasic AUC</b>     | <b>HALW vs LAHW</b> | <b>3.107</b> | <b>36.7</b> | <b>.006</b>             | <b>0.033</b>             | <b>1.020</b>     |
| Phasic AUC            | HALW vs LALW        | 1.992        | 36.7        | .057                    | 0.342                    | 0.621            |
| Phasic AUC            | LAHW vs LALW        | -2.452       | 36.7        | .021                    | 0.124                    | -0.663           |

**Table S6. Phase 2 (AVT, SVST): Marginal (Complexity-Averaged) Comparisons**

The following comparisons use each participant's mean across all three complexity levels, for every measure with a significant Group main effect (Tables 4–5 of the main manuscript).

Table 6: Post-hoc pairwise comparisons on complexity-averaged means, Phase 2.

| Task       | Measure     | Comparison          | Diff          | <i>SE</i>   | <i>t</i>     | <i>df</i>   | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|------------|-------------|---------------------|---------------|-------------|--------------|-------------|--------------------------|------------------|
| <b>AVT</b> | <b>TCT</b>  | <b>HAHW vs HALW</b> | <b>-24.94</b> | <b>8.02</b> | <b>-3.11</b> | <b>33.4</b> | <b>0.023</b>             | <b>-0.96</b>     |
| AVT        | TCT         | HAHW vs LAHW        | 9.54          | 5.68        | 1.68         | 41.2        | 0.605                    | 0.48             |
| AVT        | TCT         | HAHW vs LALW        | -0.41         | 6.58        | -0.06        | 45.9        | 1.000                    | -0.02            |
| <b>AVT</b> | <b>TCT</b>  | <b>HALW vs LAHW</b> | <b>34.48</b>  | <b>7.56</b> | <b>4.56</b>  | <b>29.6</b> | <b>&lt;.001</b>          | <b>1.41</b>      |
| <b>AVT</b> | <b>TCT</b>  | <b>HALW vs LALW</b> | <b>24.53</b>  | <b>8.25</b> | <b>2.97</b>  | <b>36.9</b> | <b>0.031</b>             | <b>0.88</b>      |
| AVT        | TCT         | LAHW vs LALW        | -9.95         | 6.01        | -1.66        | 48.0        | 0.626                    | -0.44            |
| AVT        | TTFF        | HAHW vs HALW        | -28.04        | 10.99       | -2.55        | 37.3        | 0.090                    | -0.78            |
| AVT        | TTFF        | HAHW vs LAHW        | 14.61         | 10.65       | 1.37         | 38.3        | 1.000                    | 0.40             |
| AVT        | TTFF        | HAHW vs LALW        | -3.94         | 9.92        | -0.40        | 32.0        | 1.000                    | -0.12            |
| <b>AVT</b> | <b>TTFF</b> | <b>HALW vs LAHW</b> | <b>42.65</b>  | <b>9.18</b> | <b>4.64</b>  | <b>42.9</b> | <b>&lt;.001</b>          | <b>1.32</b>      |
| <b>AVT</b> | <b>TTFF</b> | <b>HALW vs LALW</b> | <b>24.10</b>  | <b>8.32</b> | <b>2.90</b>  | <b>36.4</b> | <b>0.038</b>             | <b>0.86</b>      |
| AVT        | TTFF        | LAHW vs LALW        | -18.55        | 7.86        | -2.36        | 50.4        | 0.133                    | -0.62            |
| AVT        | TFD         | HAHW vs HALW        | -1765.76      | 647.01      | -2.73        | 27.1        | 0.066                    | -0.85            |

| Task        | Measure              | Comparison          | Diff           | <i>SE</i>      | <i>t</i>     | <i>df</i>   | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-------------|----------------------|---------------------|----------------|----------------|--------------|-------------|--------------------------|------------------|
| AVT         | TFD                  | HAHW vs LAHW        | 412.94         | 333.77         | 1.24         | 37.1        | 1.000                    | 0.36             |
| AVT         | TFD                  | HAHW vs LALW        | -519.51        | 431.49         | -1.20        | 45.9        | 1.000                    | -0.33            |
| <b>AVT</b>  | <b>TFD</b>           | <b>HALW vs LAHW</b> | <b>2178.70</b> | <b>614.95</b>  | <b>3.54</b>  | <b>23.0</b> | <b>0.010</b>             | <b>1.16</b>      |
| AVT         | TFD                  | HALW vs LALW        | 1246.26        | 673.01         | 1.85         | 30.9        | 0.442                    | 0.57             |
| AVT         | TFD                  | LAHW vs LALW        | -932.45        | 381.73         | -2.44        | 41.3        | 0.114                    | -0.66            |
| AVT         | NOF                  | HAHW vs HALW        | -2584.60       | 1052.75        | -2.46        | 32.9        | 0.117                    | -0.76            |
| AVT         | NOF                  | HAHW vs LAHW        | 1015.35        | 758.36         | 1.34         | 43.1        | 1.000                    | 0.38             |
| AVT         | NOF                  | HAHW vs LALW        | -404.47        | 817.38         | -0.49        | 45.4        | 1.000                    | -0.14            |
| <b>AVT</b>  | <b>NOF</b>           | <b>HALW vs LAHW</b> | <b>3599.95</b> | <b>1011.88</b> | <b>3.56</b>  | <b>30.7</b> | <b>0.007</b>             | <b>1.09</b>      |
| AVT         | NOF                  | HALW vs LALW        | 2180.13        | 1056.84        | 2.06         | 34.4        | 0.280                    | 0.62             |
| AVT         | NOF                  | LAHW vs LALW        | -1419.82       | 764.02         | -1.86        | 51.4        | 0.413                    | -0.50            |
| AVT         | TSD                  | HAHW vs HALW        | -2355.89       | 927.59         | -2.54        | 38.0        | 0.092                    | -0.78            |
| AVT         | TSD                  | HAHW vs LAHW        | 915.01         | 818.67         | 1.12         | 44.1        | 1.000                    | 0.32             |
| AVT         | TSD                  | HAHW vs LALW        | 430.52         | 825.93         | 0.52         | 43.9        | 1.000                    | 0.15             |
| <b>AVT</b>  | <b>TSD</b>           | <b>HALW vs LAHW</b> | <b>3270.90</b> | <b>889.14</b>  | <b>3.68</b>  | <b>39.1</b> | <b>0.004</b>             | <b>1.07</b>      |
| <b>AVT</b>  | <b>TSD</b>           | <b>HALW vs LALW</b> | <b>2786.41</b> | <b>895.83</b>  | <b>3.11</b>  | <b>39.3</b> | <b>0.021</b>             | <b>0.91</b>      |
| AVT         | TSD                  | LAHW vs LALW        | -484.49        | 782.51         | -0.62        | 52.9        | 1.000                    | -0.16            |
| AVT         | PSV                  | HAHW vs HALW        | 0.28           | 3.61           | 0.08         | 34.1        | 1.000                    | 0.02             |
| AVT         | PSV                  | HAHW vs LAHW        | -0.19          | 3.85           | -0.05        | 40.9        | 1.000                    | -0.01            |
| AVT         | PSV                  | HAHW vs LALW        | 8.24           | 3.28           | 2.51         | 27.0        | 0.110                    | 0.78             |
| AVT         | PSV                  | HALW vs LAHW        | -0.47          | 3.09           | -0.15        | 46.0        | 1.000                    | -0.04            |
| <b>AVT</b>  | <b>PSV</b>           | <b>HALW vs LALW</b> | <b>7.95</b>    | <b>2.34</b>    | <b>3.39</b>  | <b>33.7</b> | <b>0.011</b>             | <b>1.03</b>      |
| <b>AVT</b>  | <b>PSV</b>           | <b>LAHW vs LALW</b> | <b>8.42</b>    | <b>2.70</b>    | <b>3.12</b>  | <b>41.0</b> | <b>0.020</b>             | <b>0.82</b>      |
| AVT         | EDA Responses        | HAHW vs HALW        | -324.52        | 128.91         | -2.52        | 36.0        | 0.098                    | -0.78            |
| AVT         | EDA Responses        | HAHW vs LAHW        | 155.72         | 102.80         | 1.51         | 42.8        | 0.823                    | 0.43             |
| AVT         | EDA Responses        | HAHW vs LALW        | -7.35          | 109.22         | -0.07        | 44.8        | 1.000                    | -0.02            |
| <b>AVT</b>  | <b>EDA Responses</b> | <b>HALW vs LAHW</b> | <b>480.24</b>  | <b>122.10</b>  | <b>3.93</b>  | <b>34.2</b> | <b>0.002</b>             | <b>1.18</b>      |
| AVT         | EDA Responses        | HALW vs LALW        | 317.17         | 127.56         | 2.49         | 37.4        | 0.105                    | 0.74             |
| AVT         | EDA Responses        | LAHW vs LALW        | -163.07        | 101.10         | -1.61        | 51.8        | 0.677                    | -0.43            |
| SVST        | TCT                  | HAHW vs HALW        | -21.22         | 8.63           | -2.46        | 36.2        | 0.113                    | -0.76            |
| SVST        | TCT                  | HAHW vs LAHW        | 3.71           | 6.66           | 0.56         | 40.3        | 1.000                    | 0.16             |
| SVST        | TCT                  | HAHW vs LALW        | -15.53         | 7.71           | -2.02        | 45.8        | 0.299                    | -0.56            |
| <b>SVST</b> | <b>TCT</b>           | <b>HALW vs LAHW</b> | <b>24.93</b>   | <b>7.94</b>    | <b>3.14</b>  | <b>32.0</b> | <b>0.022</b>             | <b>0.96</b>      |
| SVST        | TCT                  | HALW vs LALW        | 5.69           | 8.84           | 0.64         | 40.0        | 1.000                    | 0.19             |
| <b>SVST</b> | <b>TCT</b>           | <b>LAHW vs LALW</b> | <b>-19.24</b>  | <b>6.93</b>    | <b>-2.78</b> | <b>47.8</b> | <b>0.047</b>             | <b>-0.74</b>     |
| SVST        | TTFF                 | HAHW vs HALW        | -26.49         | 10.22          | -2.59        | 38.8        | 0.080                    | -0.79            |
| SVST        | TTFF                 | HAHW vs LAHW        | 2.76           | 9.47           | 0.29         | 39.4        | 1.000                    | 0.08             |
| SVST        | TTFF                 | HAHW vs LALW        | -21.10         | 9.43           | -2.24        | 38.8        | 0.186                    | -0.66            |
| <b>SVST</b> | <b>TTFF</b>          | <b>HALW vs LAHW</b> | <b>29.25</b>   | <b>8.88</b>    | <b>3.29</b>  | <b>40.5</b> | <b>0.012</b>             | <b>0.95</b>      |
| SVST        | TTFF                 | HALW vs LALW        | 5.38           | 8.84           | 0.61         | 39.9        | 1.000                    | 0.18             |
| <b>SVST</b> | <b>TTFF</b>          | <b>LAHW vs LALW</b> | <b>-23.86</b>  | <b>7.96</b>    | <b>-3.00</b> | <b>53.0</b> | <b>0.025</b>             | <b>-0.80</b>     |
| SVST        | TFD                  | HAHW vs HALW        | -702.83        | 362.36         | -1.94        | 28.2        | 0.375                    | -0.60            |
| SVST        | TFD                  | HAHW vs LAHW        | 199.11         | 238.75         | 0.83         | 46.7        | 1.000                    | 0.23             |
| SVST        | TFD                  | HAHW vs LALW        | -451.50        | 206.59         | -2.19        | 40.2        | 0.208                    | -0.64            |
| SVST        | TFD                  | HALW vs LAHW        | 901.94         | 367.54         | 2.45         | 29.9        | 0.121                    | 0.76             |
| SVST        | TFD                  | HALW vs LALW        | 251.33         | 347.51         | 0.72         | 24.9        | 1.000                    | 0.23             |
| <b>SVST</b> | <b>TFD</b>           | <b>LAHW vs LALW</b> | <b>-650.62</b> | <b>215.54</b>  | <b>-3.02</b> | <b>48.9</b> | <b>0.024</b>             | <b>-0.80</b>     |

| Task        | Measure              | Comparison          | Diff            | <i>SE</i>      | <i>t</i>     | <i>df</i>   | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-------------|----------------------|---------------------|-----------------|----------------|--------------|-------------|--------------------------|------------------|
| SVST        | NOF                  | HAHW vs HALW        | -1726.50        | 1001.85        | -1.72        | 29.3        | 0.572                    | -0.54            |
| SVST        | NOF                  | HAHW vs LAHW        | 596.17          | 689.91         | 0.86         | 46.5        | 1.000                    | 0.24             |
| SVST        | NOF                  | HAHW vs LALW        | -1549.55        | 654.05         | -2.37        | 44.3        | 0.133                    | -0.67            |
| SVST        | NOF                  | HALW vs LAHW        | 2322.66         | 1012.78        | 2.29         | 30.9        | 0.173                    | 0.70             |
| SVST        | NOF                  | HALW vs LALW        | 176.95          | 988.69         | 0.18         | 28.7        | 1.000                    | 0.06             |
| <b>SVST</b> | <b>NOF</b>           | <b>LAHW vs LALW</b> | <b>-2145.71</b> | <b>670.66</b>  | <b>-3.20</b> | <b>52.6</b> | <b>0.014</b>             | <b>-0.85</b>     |
| SVST        | TSD                  | HAHW vs HALW        | -2258.90        | 1058.62        | -2.13        | 34.9        | 0.240                    | -0.66            |
| SVST        | TSD                  | HAHW vs LAHW        | 761.01          | 817.39         | 0.93         | 43.2        | 1.000                    | 0.26             |
| SVST        | TSD                  | HAHW vs LALW        | -1846.35        | 807.15         | -2.29        | 42.0        | 0.164                    | -0.66            |
| <b>SVST</b> | <b>TSD</b>           | <b>HALW vs LAHW</b> | <b>3019.91</b>  | <b>1011.40</b> | <b>2.99</b>  | <b>33.1</b> | <b>0.032</b>             | <b>0.90</b>      |
| SVST        | TSD                  | HALW vs LALW        | 412.56          | 1003.15        | 0.41         | 32.2        | 1.000                    | 0.13             |
| <b>SVST</b> | <b>TSD</b>           | <b>LAHW vs LALW</b> | <b>-2607.36</b> | <b>744.15</b>  | <b>-3.50</b> | <b>53.0</b> | <b>0.006</b>             | <b>-0.93</b>     |
| SVST        | EDA Responses        | HAHW vs HALW        | -248.67         | 120.91         | -2.06        | 32.3        | 0.287                    | -0.64            |
| SVST        | EDA Responses        | HAHW vs LAHW        | 81.78           | 83.25          | 0.98         | 41.8        | 1.000                    | 0.28             |
| SVST        | EDA Responses        | HAHW vs LALW        | -206.66         | 90.27          | -2.29        | 45.0        | 0.161                    | -0.65            |
| <b>SVST</b> | <b>EDA Responses</b> | <b>HALW vs LAHW</b> | <b>330.45</b>   | <b>115.07</b>  | <b>2.87</b>  | <b>29.0</b> | <b>0.045</b>             | <b>0.89</b>      |
| SVST        | EDA Responses        | HALW vs LALW        | 42.01           | 120.25         | 0.35         | 32.8        | 1.000                    | 0.11             |
| <b>SVST</b> | <b>EDA Responses</b> | <b>LAHW vs LALW</b> | <b>-288.44</b>  | <b>82.29</b>   | <b>-3.51</b> | <b>51.0</b> | <b>0.006</b>             | <b>-0.93</b>     |

**Table S7. Phase 2 (AVT, SVST): Simple Effects at Each Complexity Level**

The following comparisons use raw values at each individual complexity level (Level 1, 2, or 3), for every measure with a significant Task  $\times$  Group interaction (Tables 4–5 of the main manuscript). Descriptive means at each level are reported in the accompanying Appendix (Tables A1–A2).

Table 7: Post-hoc pairwise comparisons at each complexity level.

| Task       | Measure    | Level     | Comparison          | Diff            | <i>SE</i>      | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|------------|------------|-----------|---------------------|-----------------|----------------|--------------------------|------------------|
| AVT        | TFD        | L1        | HAHW vs HALW        | -471.70         | 300.67         | 0.765                    | -0.49            |
| AVT        | TFD        | L1        | HAHW vs LAHW        | 403.09          | 198.47         | 0.289                    | 0.57             |
| AVT        | TFD        | L1        | HAHW vs LALW        | -113.29         | 239.11         | 1.000                    | -0.13            |
| <b>AVT</b> | <b>TFD</b> | <b>L1</b> | <b>HALW vs LAHW</b> | <b>874.79</b>   | <b>299.99</b>  | <b>0.040</b>             | <b>0.91</b>      |
| AVT        | TFD        | L1        | HALW vs LALW        | 358.41          | 328.29         | 1.000                    | 0.32             |
| AVT        | TFD        | L1        | LAHW vs LALW        | -516.38         | 238.26         | 0.211                    | -0.58            |
| AVT        | TFD        | L2        | HAHW vs HALW        | -1855.41        | 751.13         | 0.119                    | -0.77            |
| AVT        | TFD        | L2        | HAHW vs LAHW        | 396.99          | 400.50         | 1.000                    | 0.29             |
| AVT        | TFD        | L2        | HAHW vs LALW        | -653.15         | 458.56         | 0.969                    | -0.41            |
| <b>AVT</b> | <b>TFD</b> | <b>L2</b> | <b>HALW vs LAHW</b> | <b>2252.41</b>  | <b>703.92</b>  | <b>0.024</b>             | <b>1.05</b>      |
| AVT        | TFD        | L2        | HALW vs LALW        | 1202.27         | 738.50         | 0.691                    | 0.51             |
| <b>AVT</b> | <b>TFD</b> | <b>L2</b> | <b>LAHW vs LALW</b> | <b>-1050.14</b> | <b>376.28</b>  | <b>0.046</b>             | <b>-0.75</b>     |
| AVT        | TFD        | L3        | HAHW vs HALW        | -2970.18        | 1110.39        | 0.076                    | -0.83            |
| AVT        | TFD        | L3        | HAHW vs LAHW        | 438.73          | 528.27         | 1.000                    | 0.25             |
| AVT        | TFD        | L3        | HAHW vs LALW        | -792.09         | 733.08         | 1.000                    | -0.30            |
| <b>AVT</b> | <b>TFD</b> | <b>L3</b> | <b>HALW vs LAHW</b> | <b>3408.91</b>  | <b>1052.69</b> | <b>0.023</b>             | <b>1.07</b>      |
| AVT        | TFD        | L3        | HALW vs LALW        | 2178.09         | 1168.97        | 0.432                    | 0.57             |
| AVT        | TFD        | L3        | LAHW vs LALW        | -1230.82        | 642.33         | 0.378                    | -0.52            |

| Task        | Measure    | Level     | Comparison          | Diff           | <i>SE</i>      | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-------------|------------|-----------|---------------------|----------------|----------------|--------------------------|------------------|
| AVT         | NOF        | L1        | HAHW vs HALW        | -870.83        | 804.30         | 1.000                    | -0.34            |
| AVT         | NOF        | L1        | HAHW vs LAHW        | 1297.80        | 525.70         | 0.105                    | 0.69             |
| AVT         | NOF        | L1        | HAHW vs LALW        | 376.72         | 522.15         | 1.000                    | 0.21             |
| AVT         | NOF        | L1        | HALW vs LAHW        | 2168.63        | 790.22         | 0.062                    | 0.86             |
| AVT         | NOF        | L1        | HALW vs LALW        | 1247.55        | 787.86         | 0.747                    | 0.50             |
| AVT         | NOF        | L1        | LAHW vs LALW        | -921.07        | 500.20         | 0.427                    | -0.49            |
| AVT         | NOF        | L2        | HAHW vs HALW        | -2190.56       | 1088.60        | 0.314                    | -0.62            |
| AVT         | NOF        | L2        | HAHW vs LAHW        | 762.52         | 811.73         | 1.000                    | 0.27             |
| AVT         | NOF        | L2        | HAHW vs LALW        | -918.84        | 827.18         | 1.000                    | -0.32            |
| AVT         | NOF        | L2        | HALW vs LAHW        | 2953.09        | 1055.48        | 0.052                    | 0.85             |
| AVT         | NOF        | L2        | HALW vs LALW        | 1271.73        | 1067.41        | 1.000                    | 0.36             |
| AVT         | NOF        | L2        | LAHW vs LALW        | -1681.36       | 783.09         | 0.218                    | -0.57            |
| AVT         | NOF        | L3        | HAHW vs HALW        | -4692.42       | 1795.44        | 0.080                    | -0.81            |
| AVT         | NOF        | L3        | HAHW vs LAHW        | 985.73         | 1254.49        | 1.000                    | 0.23             |
| AVT         | NOF        | L3        | HAHW vs LALW        | -671.30        | 1439.03        | 1.000                    | -0.13            |
| <b>AVT</b>  | <b>NOF</b> | <b>L3</b> | <b>HALW vs LAHW</b> | <b>5678.14</b> | <b>1654.95</b> | <b>0.011</b>             | <b>1.07</b>      |
| AVT         | NOF        | L3        | HALW vs LALW        | 4021.12        | 1798.87        | 0.191                    | 0.67             |
| AVT         | NOF        | L3        | LAHW vs LALW        | -1657.02       | 1259.39        | 1.000                    | -0.35            |
| AVT         | MPD        | L1        | HAHW vs HALW        | -0.11          | 0.13           | 1.000                    | -0.28            |
| AVT         | MPD        | L1        | HAHW vs LAHW        | -0.06          | 0.10           | 1.000                    | -0.17            |
| AVT         | MPD        | L1        | HAHW vs LALW        | -0.02          | 0.11           | 1.000                    | -0.06            |
| AVT         | MPD        | L1        | HALW vs LAHW        | 0.05           | 0.11           | 1.000                    | 0.15             |
| AVT         | MPD        | L1        | HALW vs LALW        | 0.09           | 0.12           | 1.000                    | 0.22             |
| AVT         | MPD        | L1        | LAHW vs LALW        | 0.04           | 0.09           | 1.000                    | 0.10             |
| AVT         | MPD        | L2        | HAHW vs HALW        | -0.03          | 0.12           | 1.000                    | -0.07            |
| AVT         | MPD        | L2        | HAHW vs LAHW        | -0.04          | 0.11           | 1.000                    | -0.11            |
| AVT         | MPD        | L2        | HAHW vs LALW        | 0.01           | 0.11           | 1.000                    | 0.02             |
| AVT         | MPD        | L2        | HALW vs LAHW        | -0.01          | 0.10           | 1.000                    | -0.03            |
| AVT         | MPD        | L2        | HALW vs LALW        | 0.04           | 0.11           | 1.000                    | 0.10             |
| AVT         | MPD        | L2        | LAHW vs LALW        | 0.05           | 0.09           | 1.000                    | 0.14             |
| AVT         | MPD        | L3        | HAHW vs HALW        | -0.01          | 0.12           | 1.000                    | -0.04            |
| AVT         | MPD        | L3        | HAHW vs LAHW        | -0.06          | 0.11           | 1.000                    | -0.15            |
| AVT         | MPD        | L3        | HAHW vs LALW        | 0.00           | 0.11           | 1.000                    | 0.01             |
| AVT         | MPD        | L3        | HALW vs LAHW        | -0.04          | 0.11           | 1.000                    | -0.12            |
| AVT         | MPD        | L3        | HALW vs LALW        | 0.02           | 0.11           | 1.000                    | 0.05             |
| AVT         | MPD        | L3        | LAHW vs LALW        | 0.06           | 0.10           | 1.000                    | 0.17             |
| SVST        | TCT        | L1        | HAHW vs HALW        | -0.30          | 7.89           | 1.000                    | -0.01            |
| SVST        | TCT        | L1        | HAHW vs LAHW        | 10.52          | 6.66           | 0.737                    | 0.46             |
| SVST        | TCT        | L1        | HAHW vs LALW        | -10.85         | 8.30           | 1.000                    | -0.36            |
| SVST        | TCT        | L1        | HALW vs LAHW        | 10.82          | 6.84           | 0.738                    | 0.47             |
| SVST        | TCT        | L1        | HALW vs LALW        | -10.55         | 8.44           | 1.000                    | -0.35            |
| <b>SVST</b> | <b>TCT</b> | <b>L1</b> | <b>LAHW vs LALW</b> | <b>-21.37</b>  | <b>7.31</b>    | <b>0.033</b>             | <b>-0.78</b>     |
| SVST        | TCT        | L2        | HAHW vs HALW        | -41.63         | 16.18          | 0.093                    | -0.80            |
| SVST        | TCT        | L2        | HAHW vs LAHW        | 3.31           | 9.46           | 1.000                    | 0.10             |
| SVST        | TCT        | L2        | HAHW vs LALW        | -18.09         | 11.32          | 0.702                    | -0.44            |
| <b>SVST</b> | <b>TCT</b> | <b>L2</b> | <b>HALW vs LAHW</b> | <b>44.94</b>   | <b>15.32</b>   | <b>0.043</b>             | <b>0.94</b>      |
| SVST        | TCT        | L2        | HALW vs LALW        | 23.54          | 16.54          | 0.987                    | 0.44             |

| Task        | Measure     | Level     | Comparison          | Diff           | <i>SE</i>     | <i>p</i> <sub>Bonf</sub> | Hedges' <i>g</i> |
|-------------|-------------|-----------|---------------------|----------------|---------------|--------------------------|------------------|
| SVST        | TCT         | L2        | LAHW vs LALW        | -21.39         | 10.05         | 0.233                    | -0.57            |
| SVST        | TCT         | L3        | HAHW vs HALW        | -21.74         | 9.16          | 0.138                    | -0.72            |
| SVST        | TCT         | L3        | HAHW vs LAHW        | -2.70          | 9.13          | 1.000                    | -0.09            |
| SVST        | TCT         | L3        | HAHW vs LALW        | -17.66         | 9.93          | 0.493                    | -0.51            |
| SVST        | TCT         | L3        | HALW vs LAHW        | 19.05          | 7.78          | 0.110                    | 0.69             |
| SVST        | TCT         | L3        | HALW vs LALW        | 4.08           | 8.70          | 1.000                    | 0.13             |
| SVST        | TCT         | L3        | LAHW vs LALW        | -14.96         | 8.67          | 0.543                    | -0.46            |
| SVST        | TTFF        | L1        | HAHW vs HALW        | -5.22          | 9.40          | 1.000                    | -0.17            |
| SVST        | TTFF        | L1        | HAHW vs LAHW        | 9.50           | 9.17          | 1.000                    | 0.30             |
| SVST        | TTFF        | L1        | HAHW vs LALW        | -16.78         | 9.82          | 0.570                    | -0.49            |
| SVST        | TTFF        | L1        | HALW vs LAHW        | 14.71          | 7.58          | 0.353                    | 0.55             |
| SVST        | TTFF        | L1        | HALW vs LALW        | -11.56         | 8.36          | 1.000                    | -0.39            |
| <b>SVST</b> | <b>TTFF</b> | <b>L1</b> | <b>LAHW vs LALW</b> | <b>-26.28</b>  | <b>8.10</b>   | <b>0.012</b>             | <b>-0.87</b>     |
| SVST        | TTFF        | L2        | HAHW vs HALW        | -45.51         | 16.99         | 0.069                    | -0.83            |
| SVST        | TTFF        | L2        | HAHW vs LAHW        | 1.34           | 11.43         | 1.000                    | 0.03             |
| SVST        | TTFF        | L2        | HAHW vs LALW        | -21.71         | 12.38         | 0.519                    | -0.50            |
| <b>SVST</b> | <b>TTFF</b> | <b>L2</b> | <b>HALW vs LAHW</b> | <b>46.85</b>   | <b>15.81</b>  | <b>0.037</b>             | <b>0.93</b>      |
| SVST        | TTFF        | L2        | HALW vs LALW        | 23.81          | 16.51         | 0.956                    | 0.44             |
| SVST        | TTFF        | L2        | LAHW vs LALW        | -23.05         | 10.71         | 0.216                    | -0.58            |
| SVST        | TTFF        | L3        | HAHW vs HALW        | -28.74         | 10.77         | 0.071                    | -0.81            |
| SVST        | TTFF        | L3        | HAHW vs LAHW        | -3.50          | 11.51         | 1.000                    | -0.09            |
| SVST        | TTFF        | L3        | HAHW vs LALW        | -24.82         | 11.42         | 0.216                    | -0.64            |
| <b>SVST</b> | <b>TTFF</b> | <b>L3</b> | <b>HALW vs LAHW</b> | <b>25.24</b>   | <b>8.82</b>   | <b>0.038</b>             | <b>0.77</b>      |
| SVST        | TTFF        | L3        | HALW vs LALW        | 3.91           | 8.71          | 1.000                    | 0.12             |
| SVST        | TTFF        | L3        | LAHW vs LALW        | -21.33         | 9.61          | 0.184                    | -0.59            |
| SVST        | TFD         | L1        | HAHW vs HALW        | -225.63        | 323.05        | 1.000                    | -0.22            |
| SVST        | TFD         | L1        | HAHW vs LAHW        | 346.04         | 244.79        | 0.988                    | 0.40             |
| SVST        | TFD         | L1        | HAHW vs LALW        | -479.56        | 235.82        | 0.291                    | -0.59            |
| SVST        | TFD         | L1        | HALW vs LAHW        | 571.67         | 309.53        | 0.443                    | 0.56             |
| SVST        | TFD         | L1        | HALW vs LALW        | -253.93        | 302.49        | 1.000                    | -0.26            |
| <b>SVST</b> | <b>TFD</b>  | <b>L1</b> | <b>LAHW vs LALW</b> | <b>-825.60</b> | <b>216.92</b> | <b>0.002</b>             | <b>-1.01</b>     |
| SVST        | TFD         | L2        | HAHW vs HALW        | -1272.98       | 595.58        | 0.258                    | -0.67            |
| SVST        | TFD         | L2        | HAHW vs LAHW        | 289.34         | 293.10        | 1.000                    | 0.27             |
| SVST        | TFD         | L2        | HAHW vs LALW        | -325.57        | 290.85        | 1.000                    | -0.31            |
| SVST        | TFD         | L2        | HALW vs LAHW        | 1562.32        | 599.68        | 0.092                    | 0.84             |
| SVST        | TFD         | L2        | HALW vs LALW        | 947.41         | 598.59        | 0.758                    | 0.51             |
| SVST        | TFD         | L2        | LAHW vs LALW        | -614.91        | 299.16        | 0.269                    | -0.55            |
| SVST        | TFD         | L3        | HAHW vs HALW        | -609.89        | 355.02        | 0.565                    | -0.53            |
| SVST        | TFD         | L3        | HAHW vs LAHW        | -38.04         | 300.50        | 1.000                    | -0.04            |
| SVST        | TFD         | L3        | HAHW vs LALW        | -549.38        | 291.50        | 0.399                    | -0.54            |
| SVST        | TFD         | L3        | HALW vs LAHW        | 571.84         | 339.04        | 0.600                    | 0.50             |
| SVST        | TFD         | L3        | HALW vs LALW        | 60.50          | 331.09        | 1.000                    | 0.05             |
| SVST        | TFD         | L3        | LAHW vs LALW        | -511.34        | 271.81        | 0.393                    | -0.50            |

## Table S8. Tonic and Phasic EDA: AVT Pairwise Comparisons

Tonic SCL and Phasic AUC were analysed for the AVT using the same two-way mixed-design repeated-measures ANOVA (Complexity within-subject, Group between-subject) used elsewhere. The Complexity main effect was significant for both measures (Tonic SCL:  $F = 14.54$ ,  $p < .001$ ,  $q_{FDR} < .001$ ; Phasic AUC:  $F = 28.34$ ,  $p < .001$ ,  $q_{FDR} < .001$ ); neither the Group main effect (Tonic SCL:  $p = .044$ ,  $q_{FDR} = .088$ ; Phasic AUC:  $p = .121$ ,  $q_{FDR} = .216$ ) nor the Complexity $\times$ Group interaction (Tonic SCL:  $p = .407$ ,  $q_{FDR} = .465$ ; Phasic AUC:  $p = .242$ ,  $q_{FDR} = .351$ ) survived FDR correction. Bonferroni-corrected pairwise comparisons are reported below for completeness, including the Complexity-level contrasts (which do survive correction, consistent with the omnibus Complexity effect) and the Group contrasts (which do not, despite two individual comparisons reaching uncorrected significance).

Table 8: AVT tonic/phasic pairwise comparisons (Bonferroni-corrected).

| Measure               | Factor            | Comparison          | $t$           | $p_{unc}$       | $p_{Bonf}$      | Hedges' $g$   |
|-----------------------|-------------------|---------------------|---------------|-----------------|-----------------|---------------|
| <b>Tonic SCL Mean</b> | <b>Complexity</b> | <b>Level 1 vs 2</b> | <b>-2.615</b> | <b>.010</b>     | <b>0.031</b>    | <b>-0.268</b> |
| <b>Tonic SCL Mean</b> | <b>Complexity</b> | <b>Level 1 vs 3</b> | <b>-4.765</b> | <b>&lt;.001</b> | <b>&lt;.001</b> | <b>-0.516</b> |
| <b>Tonic SCL Mean</b> | <b>Complexity</b> | <b>Level 2 vs 3</b> | <b>-3.500</b> | <b>.001</b>     | <b>0.002</b>    | <b>-0.214</b> |
| <b>Phasic AUC</b>     | <b>Complexity</b> | <b>Level 1 vs 2</b> | <b>-3.163</b> | <b>.002</b>     | <b>0.006</b>    | <b>-0.362</b> |
| <b>Phasic AUC</b>     | <b>Complexity</b> | <b>Level 1 vs 3</b> | <b>-6.657</b> | <b>&lt;.001</b> | <b>&lt;.001</b> | <b>-0.782</b> |
| <b>Phasic AUC</b>     | <b>Complexity</b> | <b>Level 2 vs 3</b> | <b>-4.634</b> | <b>&lt;.001</b> | <b>&lt;.001</b> | <b>-0.453</b> |
| Tonic SCL Mean        | Group             | HAHW vs HALW        | -1.143        | .255            | 1.000           | -0.206        |
| Tonic SCL Mean        | Group             | HAHW vs LAHW        | 2.650         | .009            | 0.054           | 0.442         |
| Tonic SCL Mean        | Group             | HAHW vs LALW        | 1.514         | .133            | 0.795           | 0.255         |
| <b>Tonic SCL Mean</b> | <b>Group</b>      | <b>HALW vs LAHW</b> | <b>4.270</b>  | <b>&lt;.001</b> | <b>&lt;.001</b> | <b>0.678</b>  |
| <b>Tonic SCL Mean</b> | <b>Group</b>      | <b>HALW vs LALW</b> | <b>2.951</b>  | <b>.004</b>     | <b>0.022</b>    | <b>0.475</b>  |
| Tonic SCL Mean        | Group             | LAHW vs LALW        | -1.188        | .237            | 1.000           | -0.184        |
| Phasic AUC            | Group             | HAHW vs HALW        | 0.238         | .812            | 1.000           | 0.043         |
| Phasic AUC            | Group             | HAHW vs LAHW        | 2.261         | .025            | 0.152           | 0.363         |
| Phasic AUC            | Group             | HAHW vs LALW        | 2.509         | .013            | 0.080           | 0.422         |
| Phasic AUC            | Group             | HALW vs LAHW        | 2.101         | .037            | 0.225           | 0.333         |
| Phasic AUC            | Group             | HALW vs LALW        | 2.346         | .020            | 0.122           | 0.388         |
| Phasic AUC            | Group             | LAHW vs LALW        | -0.006        | .995            | 1.000           | -0.001        |

## Table S9. Tonic and Phasic EDA: SVST Pairwise Comparisons

The Complexity main effect was significant for both measures on the SVST (Tonic SCL:  $F = 6.50$ ,  $p = .006$ ,  $q_{FDR} = .015$ ; Phasic AUC:  $F = 9.11$ ,  $p < .001$ ,  $q_{FDR} = .001$ ); neither the Group main effect (Tonic SCL:  $p = .306$ ,  $q_{FDR} = .408$ ; Phasic AUC:  $p = .166$ ,  $q_{FDR} = .266$ ) nor the Complexity $\times$ Group interaction (both  $q_{FDR} > .90$ ) survived correction.

Table 9: SVST tonic/phasic pairwise comparisons (Bonferroni-corrected).

| Measure               | Factor            | Comparison          | $t$           | $p_{unc}$       | $p_{Bonf}$      | Hedges' $g$   |
|-----------------------|-------------------|---------------------|---------------|-----------------|-----------------|---------------|
| Tonic SCL Mean        | Complexity        | Level 1 vs 2        | -1.679        | .096            | 0.289           | -0.161        |
| <b>Tonic SCL Mean</b> | <b>Complexity</b> | <b>Level 1 vs 3</b> | <b>-3.049</b> | <b>.003</b>     | <b>0.009</b>    | <b>-0.300</b> |
| <b>Tonic SCL Mean</b> | <b>Complexity</b> | <b>Level 2 vs 3</b> | <b>-3.080</b> | <b>.003</b>     | <b>0.008</b>    | <b>-0.129</b> |
| <b>Phasic AUC</b>     | <b>Complexity</b> | <b>Level 1 vs 2</b> | <b>-2.448</b> | <b>.016</b>     | <b>0.049</b>    | <b>-0.313</b> |
| <b>Phasic AUC</b>     | <b>Complexity</b> | <b>Level 1 vs 3</b> | <b>-3.978</b> | <b>&lt;.001</b> | <b>&lt;.001</b> | <b>-0.506</b> |
| Phasic AUC            | Complexity        | Level 2 vs 3        | -1.985        | .050            | 0.150           | -0.168        |
| Tonic SCL Mean        | Group             | HAHW vs HALW        | -0.858        | .393            | 1.000           | -0.155        |
| Tonic SCL Mean        | Group             | HAHW vs LAHW        | 1.497         | .137            | 0.820           | 0.248         |
| Tonic SCL Mean        | Group             | HAHW vs LALW        | 1.402         | .164            | 0.983           | 0.245         |
| <b>Tonic SCL Mean</b> | <b>Group</b>      | <b>HALW vs LAHW</b> | <b>2.690</b>  | <b>.008</b>     | <b>0.048</b>    | <b>0.419</b>  |
| <b>Tonic SCL Mean</b> | <b>Group</b>      | <b>HALW vs LALW</b> | <b>2.829</b>  | <b>.005</b>     | <b>0.032</b>    | <b>0.463</b>  |
| Tonic SCL Mean        | Group             | LAHW vs LALW        | -0.283        | .778            | 1.000           | -0.044        |
| Phasic AUC            | Group             | HAHW vs HALW        | -1.763        | .081            | 0.483           | -0.316        |
| Phasic AUC            | Group             | HAHW vs LAHW        | 1.143         | .255            | 1.000           | 0.188         |
| Phasic AUC            | Group             | HAHW vs LALW        | 0.505         | .615            | 1.000           | 0.084         |

| Measure           | Factor       | Comparison          | $t$          | $p_{\text{unc}}$ | $p_{\text{Bonf}}$ | Hedges' $g$  |
|-------------------|--------------|---------------------|--------------|------------------|-------------------|--------------|
| <b>Phasic AUC</b> | <b>Group</b> | <b>HALW vs LAHW</b> | <b>2.938</b> | <b>.004</b>      | <b>0.023</b>      | <b>0.478</b> |
| Phasic AUC        | Group        | HALW vs LALW        | 2.311        | .022             | 0.134             | 0.382        |
| Phasic AUC        | Group        | LAHW vs LALW        | -0.657       | .512             | 1.000             | -0.102       |