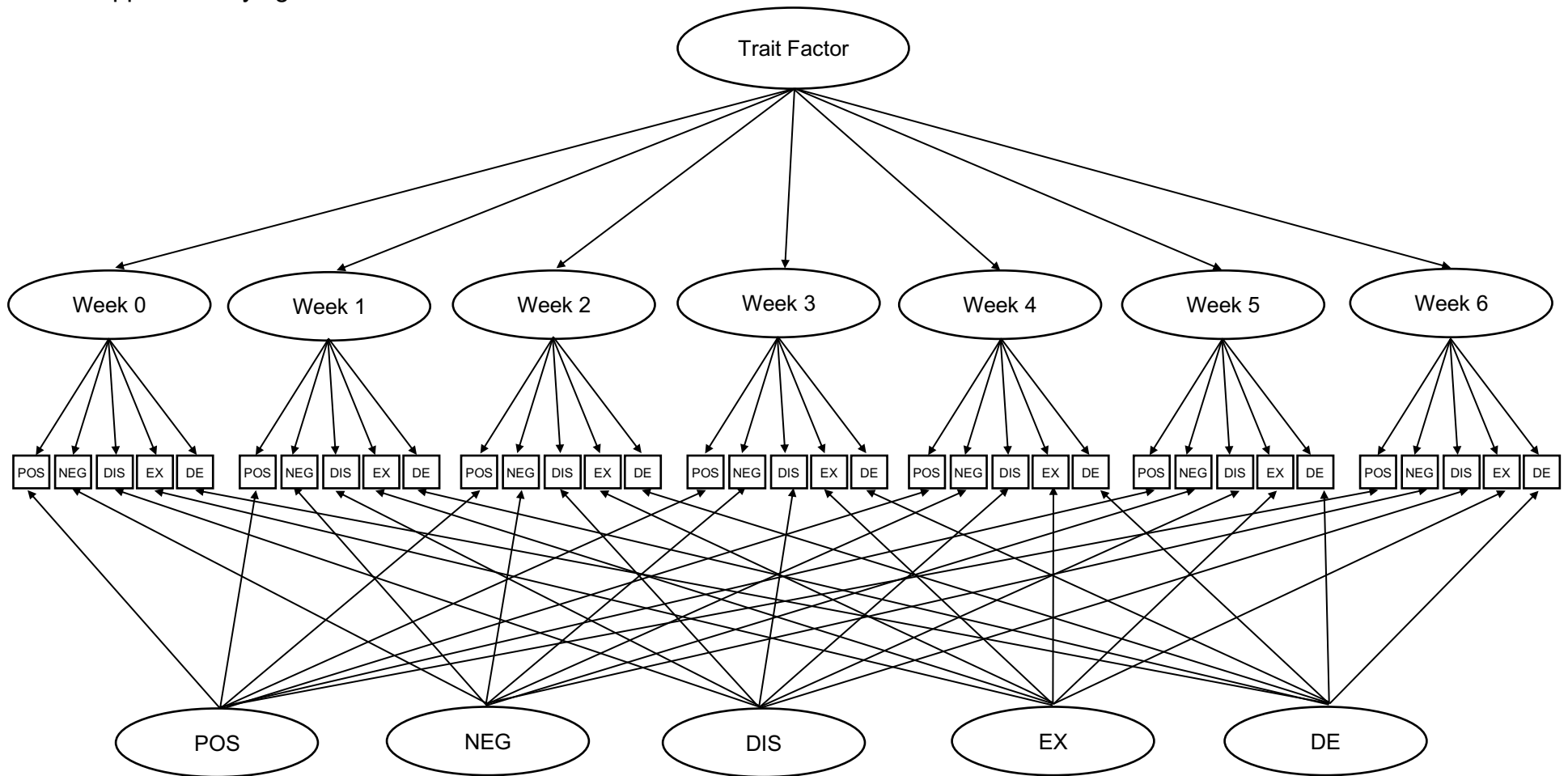


## SUPPLEMENTAL MATERIAL

Supplementary figure 1. Latent state-trait model.



*Note:* The model consists of one single latent variable representing the trait factor, seven latent state variables corresponding to the number of visits during the study (baseline, week 1, week 2, week 3, week 4, week 5 and week 6), and five latent state variables defining the five Wallwork factors (POS, NEG; DIS, EX, DE) as observed indicator variables.

Supplementary table 3. LST model coefficients by treatment and score

| Treatment group | Wallwork factor | Study vist | CO % | OS % | Method % | Error % |
|-----------------|-----------------|------------|------|------|----------|---------|
| CAR             | POS             | Week 0     | 41.8 | 9.4  | 20.4     | 28.4    |
|                 |                 | Week 1     | 45.4 | 5.9  | 27.8     | 20.9    |
|                 |                 | Week 2     | 50.4 | 3.4  | 32.6     | 13.6    |
|                 |                 | Week 3     | 54.9 | 0.5  | 37.0     | 7.6     |
|                 |                 | Week 4     | 49.8 | 3.5  | 42.2     | 4.5     |
|                 |                 | Week 5     | 44.6 | 7.1  | 38.3     | 10.0    |
|                 |                 | Week 6     | 41.3 | 9.1  | 35.7     | 13.9    |
|                 | NEG             | Week 0     | 44.1 | 13.8 | 22.7     | 19.4    |
|                 |                 | Week 1     | 48.3 | 8.9  | 28.0     | 14.8    |
|                 |                 | Week 2     | 53.1 | 4.9  | 31.7     | 10.3    |
|                 |                 | Week 3     | 58.8 | 0.9  | 36.4     | 3.9     |
|                 |                 | Week 4     | 53.5 | 5.8  | 33.8     | 6.9     |
|                 |                 | Week 5     | 48.1 | 11.8 | 28.6     | 11.5    |
|                 |                 | Week 6     | 44.6 | 15.8 | 26.2     | 13.4    |
|                 | DIS             | Week 0     | 45.5 | 16.4 | 26.4     | 11.7    |
|                 |                 | Week 1     | 49.9 | 10.5 | 31.3     | 8.3     |
|                 |                 | Week 2     | 54.9 | 5.9  | 33.5     | 5.7     |
|                 |                 | Week 3     | 59.9 | 1.0  | 33.5     | 5.6     |
|                 |                 | Week 4     | 55.2 | 6.8  | 32.2     | 5.8     |
|                 |                 | Week 5     | 49.9 | 14.2 | 28.8     | 7.1     |
|                 |                 | Week 6     | 46.2 | 18.8 | 26.1     | 8.9     |
|                 | EX              | Week 0     | 40.5 | 6.8  | 19.2     | 33.5    |
|                 |                 | Week 1     | 44.1 | 4.6  | 24.3     | 27.0    |
|                 |                 | Week 2     | 49.3 | 2.8  | 30.7     | 17.2    |
|                 |                 | Week 3     | 54.4 | 0.5  | 35.6     | 9.5     |
|                 |                 | Week 4     | 49.4 | 3.3  | 35.3     | 12.0    |
|                 |                 | Week 5     | 44.6 | 7.0  | 32.3     | 16.1    |
|                 |                 | Week 6     | 41.3 | 9.1  | 25.9     | 23.7    |
| DE              | Week 0          | 38.8       | 3.6  | 29.6 | 28.0     |         |
|                 | Week 1          | 41.9       | 2.3  | 33.2 | 22.6     |         |
|                 | Week 2          | 46.7       | 1.3  | 35.9 | 16.1     |         |
|                 | Week 3          | 51.6       | 0.2  | 40.0 | 8.2      |         |
|                 | Week 4          | 46.7       | 1.6  | 41.2 | 10.5     |         |
|                 | Week 5          | 42.1       | 3.7  | 38.1 | 16.1     |         |
|                 | Week 6          | 39.3       | 5.2  | 33.2 | 22.3     |         |
| PBO             | POS             | Week 0     | 43.0 | 9.4  | 23.6     | 24.0    |

|            |        |      |      |      |      |
|------------|--------|------|------|------|------|
|            | Week 1 | 46.4 | 5.6  | 32.0 | 16.0 |
|            | Week 2 | 52.1 | 2.4  | 35.0 | 10.5 |
|            | Week 3 | 55.5 | 0.3  | 39.7 | 4.5  |
|            | Week 4 | 51.0 | 2.3  | 41.3 | 5.4  |
|            | Week 5 | 46.6 | 5.2  | 39.5 | 8.7  |
|            | Week 6 | 41.9 | 8.7  | 39.0 | 10.4 |
| <b>NEG</b> | Week 0 | 46.0 | 14.6 | 21.9 | 17.5 |
|            | Week 1 | 50.6 | 9.3  | 28.2 | 11.9 |
|            | Week 2 | 56.5 | 4.1  | 32.1 | 7.3  |
|            | Week 3 | 60.6 | 0.5  | 34.7 | 4.2  |
|            | Week 4 | 56.6 | 4.6  | 32.5 | 6.3  |
|            | Week 5 | 51.7 | 10.4 | 27.8 | 10.1 |
|            | Week 6 | 46.5 | 17.0 | 25.7 | 10.8 |
| <b>DIS</b> | Week 0 | 46.5 | 15.5 | 26.1 | 11.9 |
|            | Week 1 | 51.1 | 9.7  | 31.5 | 7.7  |
|            | Week 2 | 56.8 | 4.2  | 32.6 | 6.4  |
|            | Week 3 | 60.8 | 0.5  | 33.0 | 5.7  |
|            | Week 4 | 57.6 | 5.0  | 32.2 | 5.2  |
|            | Week 5 | 52.5 | 11.1 | 27.9 | 8.5  |
|            | Week 6 | 46.8 | 17.6 | 25.1 | 10.5 |
| <b>EX</b>  | Week 0 | 41.3 | 6.4  | 24.5 | 27.8 |
|            | Week 1 | 44.7 | 4.1  | 30.0 | 21.2 |
|            | Week 2 | 50.5 | 1.8  | 35.2 | 12.5 |
|            | Week 3 | 54.3 | 0.2  | 39.6 | 5.9  |
|            | Week 4 | 50.5 | 2.1  | 38.7 | 8.7  |
|            | Week 5 | 46.1 | 4.7  | 35.1 | 14.1 |
|            | Week 6 | 41.7 | 8.1  | 30.3 | 19.9 |
| <b>DE</b>  | Week 0 | 39.4 | 3.1  | 32.6 | 24.9 |
|            | Week 1 | 42.3 | 2.0  | 36.9 | 18.8 |
|            | Week 2 | 48.1 | 0.8  | 38.9 | 12.2 |
|            | Week 3 | 51.7 | 0.1  | 41.2 | 7.0  |
|            | Week 4 | 48.0 | 1.0  | 41.4 | 9.6  |
|            | Week 5 | 43.8 | 2.4  | 38.0 | 15.8 |
|            | Week 6 | 39.6 | 4.4  | 35.4 | 20.6 |

*Note:* standardized values, calculated based on effects coding identification. CAR: cariprazine treatment group; PBO: placebo treatment group. POS: positive symptom factor scores; NEG: negative symptom factor scores; DIS: disorganized thought factor scores; EX: uncontrolled hostility/excitement factor scores; DE: depression/anxiety factor scores. CO: Consistency coefficient; OS: Occasion specific coefficient.