**Supplement Tables**

**Associations of Maternal Postpartum Depressive and Anxiety Symptoms with 4-month Infant and Mother Self- and Interactive Contingency of Gaze, Affect, and Touch**

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**Time-Series Models of Self- and Interactive Contingency**

**and**

**Analysis of Predicted Values: Descriptive Probability Explication of Time-Series Models**

We present Individual Seconds time-series models for each of 4 modality pairings (see Method). Because time-series models generate abstract findings of higher and lower contingency, we clarified the findings with descriptive analyses of predicted values, taken from the individual seconds time-series models (see Method). This Supplement includes two sections. The first follows the main hypotheses of the study and presents Analyses of 6-week Depressive, and 6-week Anxiety, Symptoms. The second section presents exploratory analyses of Comorbid 6-week High Depressive and Anxiety Symptoms.

The numbering of the Supplement Tables follows the presentation of the results in the paper. For each modality pairing, we first present Tables for the infant, followed by Tables for the mother. For each modality pairing (e.g. Infant Gaze – Mother Gaze), we include a multi-level time-series model (e.g. S1a, *Infant Gaze – Mother Gaze: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Infant 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models*) and an analysis of predicted infant values, first for maternal depressive symptoms (e.g. S1b, *Infant Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Gaze)*, and then for maternal anxiety symptoms (e.g. S1c, *Infant Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Gaze).*We note that the Analysis of Predicted Values is presented only if there is a significant effect in the times-series model.

The second section, exploratory analyses of comorbid 6-week high depressive and anxiety symptoms, are presented in Tables S5-S8. The ordering of the time-series tables follows the structure above. However, we did not perform Analysis of Predicted Values for these comorbid analyses.

Table S9 presents a summary of self- and interactive contingency results of maternal 6-week high depressive symptoms, high anxiety symptoms, and comorbid high depressive and anxiety symptoms associated with infant and mother self- and interactive contingency at 4 months.

**Analyses of 6-week Depressive, and 6-week Anxiety, Symptoms**

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| **Table S1a***Infant Gaze – Mother Gaze: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Infant Gaze 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | IG | -18.001 | 14.948 | 0.228 |
| M 6wk Anx  |  |  | →  | IG | 7.341 | 14.630 | 0.616 |
| IG L1  |  |  | →  | IG | 57.050 | 4.006 | <.0001 |
| IG L2  |  |  | →  | IG | 49.412 | 4.100 | <.0001 |
| IG L3  |  |  | →  | IG | 9.287 | 4.279 | 0.030 |
| MG L1  |  |  | →  | IG | 1.621 | 3.992 | 0.685 |
| MG L2  |  |  | →  | IG | -2.546 | 3.937 | 0.518 |
| MG L3  |  |  | →  | IG | -0.183 | 3.992 | 0.964 |
| **M 6wk Dep**  | **\*** | **IG L1**  | →  | **IG** | **24.076** | **5.680** | **<.0001** |
| M 6wk Dep  | \* | IG L2  | →  | IG | -11.289 | 5.972 | 0.059 |
| M 6wk Dep  | \* | IG L3  | →  | IG | 11.140 | 6.052 | 0.066 |
| M 6wk Dep  | \* | MG L1  | →  | IG | 0.310 | 7.962 | 0.969 |
| M 6wk Dep  | \* | MG L2  | →  | IG | 14.166 | 7.827 | 0.070 |
| M 6wk Dep  | \* | MG L3  | →  | IG | -1.786 | 7.913 | 0.821 |
| **M 6wk Anx**  | \* | **IG L1**  | →  | IG | **-12.251** | **5.395** | **0.023** |
| M 6wk Anx  | \* | IG L2  | →  | IG | -3.937 | 5.558 | 0.479 |
| M 6wk Anx  | \* | IG L3  | →  | IG | -3.482 | 5.717 | 0.543 |
| M 6wk Anx  | \* | MG L1  | →  | IG | 5.095 | 7.583 | 0.502 |
| M 6wk Anx  | \* | MG L2  | →  | IG | -10.670 | 7.450 | 0.152 |
| M 6wk Anx  | \* | MG L3  | →  | IG | 6.495 | 7.542 | 0.389 |
| *Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IG = Infant Gaze at t0; MG = Mother Gaze; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior). |

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| **Table S1b***Infant Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Gaze* |
|  | **I Gaze L1** | I Gaze L2 | I Gaze L3 | M Gaze L1 | M Gaze L2 | M Gaze L3 | Predicted Logit Values of Probability of  I Gaze-on t0  | Absolute Difference |
| Lo-Depressive Symptoms6wk | Hi-Depressive Symptoms6wk |
| The Top 10 | **1** | 0 | 1 | 1 | 1 | 0 | 66.086 | 97.767 | 31.682 |
| **1** | 0 | 1 | 0 | 1 | 0 | 64.465 | 95.837 | 31.372 |
| **1** | 0 | 1 | 1 | 1 | 1 | 65.903 | 95.798 | 29.895 |
| **1** | 0 | 1 | 0 | 1 | 1 | 64.282 | 93.868 | 29.586 |
| **1** | 0 | 0 | 1 | 1 | 0 | 56.799 | 77.341 | 20.542 |
| **1** | 1 | 1 | 1 | 1 | 0 | 115.498 | 135.891 | 20.393 |
| **1** | 0 | 0 | 0 | 1 | 0 | 55.178 | 75.410 | 20.233 |
| **1** | 1 | 1 | 0 | 1 | 0 | 113.877 | 133.961 | 20.084 |
| **1** | 0 | 0 | 1 | 1 | 1 | 56.616 | 75.372 | 18.756 |
| **1** | 1 | 1 | 1 | 1 | 1 | 115.315 | 133.922 | 18.607 |
| The Bottom 10 | **0** | 0 | 0 | 0 | 0 | 0 | 0.674 | -17.335 | 18.002 |
| **0** | 1 | 1 | 0 | 0 | 0 | 59.373 | 41.215 | 18.158 |
| **0** | 0 | 0 | 1 | 0 | 1 | 2.112 | -17.373 | 19.486 |
| **0** | 1 | 1 | 1 | 0 | 1 | 60.812 | 41.177 | 19.635 |
| **0** | 0 | 0 | 0 | 0 | 1 | 0.491 | -19.304 | 19.795 |
| **0** | 1 | 1 | 0 | 0 | 1 | 59.191 | 39.247 | 19.944 |
| **0** | 1 | 0 | 1 | 0 | 0 | 51.707 | 22.719 | 28.988 |
| **0** | 1 | 0 | 0 | 0 | 0 | 50.086 | 20.789 | 29.298 |
| **0** | 1 | 0 | 1 | 0 | 1 | 51.525 | 20.750 | 30.774 |
| **0** | 1 | 0 | 0 | 0 | 1 | 49.904 | 18.820 | 31.084 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted logit values of the probability of infant (I) gaze-on at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **I Gaze L1** is bolded to indicate a significant self-contingency difference between symptom groups when predicting I gaze-on at t0 from I Gaze L1 (see Table S1a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for I Gaze L1, the top ten behaviors are gaze-on (1) and the bottom ten behaviors are gaze-off (0). For the top ten probability values, given I gaze-on (1) at L1, the probability of I gaze-on at t0 is higher in the high- (vs. low-) depressive symptom group. For the bottom ten probability values, given I gaze-off (0) at L1, the probability of I gaze-on at t0 is lower in the high- (vs. low-) depressive symptom group.

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| **Table S1c***Infant Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Gaze* |
|  | **I Gaze L1** | I Gaze L2 | I Gaze L3 | M Gaze L1 | M Gaze L2 | M Gaze L3 | Predicted Logit Values of Probability I Gaze-on t0 | Absolute Difference |
|  | Lo-Anxiety Symptoms6wk | Hi-Anxiety Symptoms6wk |
| The Top 10 | **0** | 0 | 0 | 1 | 0 | 1 | 2.112 | 21.044 | 18.931 |
| **0** | 0 | 1 | 1 | 0 | 1 | 11.399 | 26.849 | 15.450 |
| **0** | 1 | 0 | 1 | 0 | 1 | 51.525 | 66.519 | 14.994 |
| **0** | 0 | 0 | 0 | 0 | 1 | 0.491 | 14.328 | 13.836 |
| **0** | 0 | 0 | 1 | 0 | 0 | 2.295 | 14.731 | 12.436 |
| **0** | 1 | 1 | 1 | 0 | 1 | 60.812 | 72.324 | 11.512 |
| **0** | 0 | 1 | 0 | 0 | 1 | 9.778 | 20.131 | 10.355 |
| **0** | 1 | 0 | 0 | 0 | 1 | 49.904 | 59.803 | 9.899 |
| **0** | 0 | 1 | 1 | 0 | 0 | 11.582 | 20.536 | 8.954 |
| **0** | 1 | 0 | 1 | 0 | 0 | 51.707 | 60.206 | 8.499 |
| The Bottom Top 10 | **1** | 1 | 1 | 0 | 0 | 0 | 116.423 | 104.095 | 12.329 |
| **1** | 0 | 1 | 0 | 1 | 1 | 64.282 | 51.716 | 12.566 |
| **1** | 1 | 0 | 0 | 1 | 1 | 104.407 | 91.386 | 13.022 |
| **1** | 0 | 1 | 1 | 1 | 0 | 66.086 | 52.119 | 13.967 |
| **1** | 1 | 0 | 1 | 1 | 0 | 106.211 | 91.789 | 14.422 |
| **1** | 0 | 0 | 0 | 1 | 0 | 55.178 | 39.598 | 15.58 |
| **1** | 1 | 1 | 0 | 1 | 1 | 113.694 | 97.191 | 16.504 |
| **1** | 1 | 1 | 1 | 1 | 0 | 115.498 | 97.594 | 17.904 |
| **1** | 0 | 1 | 0 | 1 | 0 | 64.465 | 45.403 | 19.062 |
| **1** | 1 | 0 | 0 | 1 | 0 | 104.590 | 85.073 | 19.517 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted logit values of the probability of Infant (I) gaze-on at t0 for 6-week high- (vs. low-) anxiety symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **I Gaze L1**isbolded to indicate a significant self-contingency difference between symptom groups when predicting I gaze-on at t0 from I Gaze L2 (see Table S1a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for I Gaze L1, the top ten behaviors are gaze-off (0) and the bottom ten behaviors are gaze-on (1). For the top ten probability values, given I gaze-off (0) at L1, the probability of I gaze-on at t0 is higher in the high- (vs. low-) anxiety symptom group. For the bottom ten probability values, given I gaze-on (1) at L1, the probability of I gaze-on at t0 is lower in the high- (vs. low-) anxiety symptom group.

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| **Table S1d***Infant Gaze – Mother Gaze: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Mother Gaze Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | MG | -23.806 | 11.724 | 0.042 |
| M 6wk Anx  |  |  | →  | MG | -9.876 | 11.506 | 0.391 |
| MG L1  |  |  | →  | MG | -13.911 | 4.494 | 0.002 |
| MG L2  |  |  | →  | MG | 40.291 | 3.473 | <.0001 |
| MG L3  |  |  | →  | MG | 12.531 | 4.047 | 0.002 |
| IG L1  |  |  | →  | MG | 24.083 | 5.211 | <.0001 |
| IG L2  |  |  | →  | MG | -6.366 | 5.355 | 0.235 |
| IG L3  |  |  | →  | MG | -1.425 | 5.278 | 0.787 |
| M 6wk Dep  | \* | MG L1  | →  | MG | 10.697 | 7.864 | 0.174 |
| **M 6wk Dep**  | \* | **MG L2**  | →  | MG | **16.108** | **6.637** | **0.015** |
| M 6wk Dep  | \* | MG L3  | →  | MG | 3.865 | 7.577 | 0.610 |
| M 6wk Dep  | \* | IG L1  | →  | MG | 7.547 | 7.214 | 0.296 |
| M 6wk Dep  | \* | IG L2  | →  | MG | 12.570 | 7.451 | 0.092 |
| M 6wk Dep  | \* | IG L3  | →  | MG | -9.543 | 7.393 | 0.197 |
| **M 6wk Anx**  | \* | **MG L1**  | →  | MG | **18.050** | **7.596** | **0.018** |
| **M 6wk Anx**  | \* | **MG L2**  | →  | MG | **-20.512** | **6.402** | **0.001** |
| M 6wk Anx  | \* | MG L3  | →  | MG | -7.929 | 7.234 | 0.273 |
| M 6wk Anx  | \* | IG L1  | →  | MG | -1.430 | 6.790 | 0.833 |
| M 6wk Anx  | \* | IG L2  | →  | MG | 2.071 | 6.891 | 0.764 |
| M 6wk Anx  | \* | IG L3  | →  | MG | 8.249 | 6.884 | 0.231 |
| *Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IG = Infant Gaze; MG = Mother Gaze at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior). |

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| **Table S1e***Mother Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Mother Gaze-on at t0 from Mother Gaze and Infant Gaze*  |
|  | M Gaze L1 | **M Gaze L2** | M Gaze L3 | I Gaze L1 | I Gaze L2 | I Gaze L3 | Predicted Probability M Gaze-on t0 | Absolute Difference |
|  | Lo-Depressive Symptoms6wk | Hi-Depressive Symptoms6wk |
| The Top 10 | 1 | **1** | 1 | 1 | 1 | 0 | 58.509 | 85.489 | 26.980 |
| 1 | **1** | 0 | 1 | 1 | 0 | 45.978 | 69.093 | 23.115 |
| 1 | **1** | 1 | 0 | 1 | 0 | 34.427 | 53.859 | 19.432 |
| 1 | **1** | 1 | 1 | 1 | 1 | 57.084 | 74.521 | 17.437 |
| 0 | **1** | 1 | 1 | 1 | 0 | 72.421 | 88.704 | 16.283 |
| 1 | **1** | 0 | 0 | 1 | 0 | 21.896 | 37.463 | 15.567 |
| 1 | **1** | 1 | 1 | 0 | 0 | 64.875 | 79.285 | 14.410 |
| 1 | **1** | 0 | 1 | 1 | 1 | 44.553 | 58.125 | 13.572 |
| 0 | **1** | 0 | 1 | 1 | 0 | 59.890 | 72.308 | 12.418 |
| 1 | **0** | 1 | 1 | 1 | 0 | 18.218 | 29.090 | 10.872 |
| The Bottom 10 | 0 | **1** | 0 | 0 | 0 | 1 | 40.748 | 23.507 | 17.242 |
| 1 | **0** | 1 | 0 | 0 | 1 | -0.924 | -19.711 | 18.788 |
| 0 | **0** | 1 | 0 | 0 | 0 | 14.413 | -5.529 | 19.941 |
| 0 | **0** | 0 | 0 | 1 | 1 | -5.909 | -26.689 | 20.780 |
| 0 | **0** | 1 | 1 | 0 | 1 | 37.070 | 15.133 | 21.937 |
| 1 | **0** | 0 | 0 | 0 | 1 | -13.455 | -36.107 | 22.653 |
| 0 | **0** | 0 | 0 | 0 | 0 | 1.882 | -21.925 | 23.806 |
| 0 | **0** | 0 | 1 | 0 | 1 | 24.539 | -1.263 | 25.802 |
| 0 | **0** | 1 | 0 | 0 | 1 | 12.988 | -16.496 | 29.484 |
| 0 | **0** | 0 | 0 | 0 | 1 | 0.457 | -32.892 | 33.349 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted values of the probability of mother (M) gaze-on at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **M Gaze L2** isbolded to indicate a significant self-contingency difference between symptom groups when predicting M gaze-on at t0 from M Gaze L2 (see Table S1d). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for M Gaze L2, the top ten behaviors are gaze-on (1) and the bottom ten behaviors are gaze-off (0). For the top ten probability values, given M Gaze tending toward gaze-on (1) at L2, the probability of M gaze-on at t0 is higher in the high- (vs. low-) depressive symptom group. For the bottom ten probability values, given M Gaze tending toward gaze-off (0) at L2, the probability of M gaze-on at t0 is lower in the high- (vs. low-) depressive symptom group.

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| **Table S1f***Mother Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Mother Gaze-on at t0 from Mother Gaze and Infant Gaze* |
|  | **M Gaze L1** | **M Gaze L2** | M Gaze L3 | I Gaze L1 | I Gaze L2 | I Gaze L3 | Predicted Probability M Gaze-on t0 | Absolute Difference |
|  | Lo-Anxiety Symptoms6wk | Hi-Anxiety Symptoms6wk |
| The Top 10 | **1** | **0** | 0 | 0 | 1 | 1 | -19.821 | -1.327 | 18.494 |
| **1** | **0** | 0 | 1 | 1 | 1 | 4.262 | 21.325 | 17.063 |
| **1** | **0** | 0 | 0 | 0 | 1 | -13.455 | 2.968 | 16.423 |
| **1** | **0** | 0 | 1 | 0 | 1 | 10.628 | 25.621 | 14.993 |
| **1** | **0** | 1 | 0 | 1 | 1 | -7.290 | 3.275 | 10.565 |
| **1** | **0** | 0 | 0 | 1 | 0 | -18.396 | -8.152 | 10.244 |
| **1** | **0** | 1 | 1 | 1 | 1 | 16.793 | 25.927 | 9.134 |
| **1** | **0** | 0 | 1 | 1 | 0 | 5.687 | 14.501 | 8.814 |
| **1** | **0** | 1 | 0 | 0 | 1 | -0.924 | 7.570 | 8.494 |
| **1** | **0** | 0 | 0 | 0 | 0 | -12.030 | -3.856 | 8.174 |
| The Bottom 10 | **0** | **1** | 1 | 1 | 1 | 1 | 70.996 | 41.568 | 29.427 |
| **0** | **1** | 0 | 1 | 1 | 0 | 59.890 | 30.142 | 29.748 |
| **0** | **1** | 1 | 0 | 0 | 1 | 53.279 | 23.212 | 30.067 |
| **0** | **1** | 0 | 0 | 0 | 0 | 42.173 | 11.786 | 30.388 |
| **0** | **1** | 1 | 1 | 0 | 1 | 77.362 | 45.864 | 31.498 |
| **0** | **1** | 0 | 1 | 0 | 0 | 66.256 | 34.438 | 31.818 |
| **0** | **1** | 1 | 0 | 1 | 0 | 48.338 | 12.092 | 36.246 |
| **0** | **1** | 1 | 1 | 1 | 0 | 72.421 | 34.744 | 37.677 |
| **0** | **1** | 1 | 0 | 0 | 0 | 54.704 | 16.387 | 38.317 |
| **0** | **1** | 1 | 1 | 0 | 0 | 78.787 | 39.040 | 39.747 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted values of the probability of mother (M) gaze-on at t0 for 6-week high- (vs. low-) anxiety symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **M Gaze L1 and M Gaze L2** are bolded to indicate significant self-contingency differences between symptom groups when predicting M gaze-on at t0 from M Gaze L1 and L2 (see Table S1d). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for M Gaze L1, the top ten behaviors are gaze-on (1) and the bottom ten behaviors are gaze-off (0). For the top ten probability values, given M gaze-on (1) at L1, and -off (0) at L2, the probability of M gaze-on at t0 is higher in the high- (vs. low-) anxiety symptom group. For the bottom ten probability values, given M gaze-off (0) at L1, and -on (1) at L2, the probability of M gaze-on at t0 is lower in the high- (vs. low-) anxiety symptom group.

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| **Table S2a***Infant Gaze – Mother Touch: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Infant Gaze 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | IG | -6.848 | 11.013 | 0.534 |
| M 6wk Anx  |  |  | →  | IG | 7.275 | 10.903 | 0.505 |
| IG L1  |  |  | →  | IG | 58.068 | 4.002 | <.0001 |
| IG L2  |  |  | →  | IG | 49.287 | 4.088 | <.0001 |
| IG L3  |  |  | →  | IG | 8.978 | 4.254 | 0.035 |
| MT L1  |  |  | →  | IG | -8.755 | 4.965 | 0.078 |
| MT L2  |  |  |  →  | IG | 5.705 | 5.328 | 0.284 |
| MT L3  |  |  | →  | IG | -1.149 | 4.989 | 0.818 |
| **M 6wk Dep**  | **\*** | **IG L1**  | →  | **IG** | **23.308** | **5.646** | **<.001** |
| M 6wk Dep  | \* | IG L2  | →  | IG | -10.645 | 5.928 | 0.073 |
| M 6wk Dep  | \* | IG L3  | →  | IG | 11.640 | 6.007 | 0.053 |
| M 6wk Dep  | \* | MT L1  | →  | IG | 3.189 | 5.097 | 0.532 |
| M 6wk Dep  | \* | MT L2  | →  | IG | -5.229 | 5.575 | 0.348 |
| M 6wk Dep  | \* | MT L3  | →  | IG | 0.039 | 5.118 | 0.994 |
| **M 6wk Anx**  | **\*** | **IG L1**  | →  | **IG** | **-11.539** | **5.353** | **0.031** |
| M 6wk Anx  | \* | IG L2  | →  | IG | -3.484 | 5.503 | 0.527 |
| M 6wk Anx  | \* | IG L3  | →  | IG | -3.707 | 5.663 | 0.513 |
| M 6wk Anx  | \* | MT L1  | →  | IG | -2.378 | 4.777 | 0.619 |
| M 6wk Anx  | \* | MT L2  | →  | IG | 3.114 | 5.170 | 0.547 |
| M 6wk Anx  | \* | MT L3  | →  | IG | 6.244 | 4.774 | 0.191 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IG = Infant Gaze at t0; MT = Mother Touch; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S2b** *Infant Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Touch* |
|  | **I Gaze L1** | I Gaze L2 | I Gaze L3 | M Touch L1 | M Touch L2 | M Touch L3 | Predicted Probability I Gaze t0 | Absolute Difference |
| Lo-Depressive Symptoms6 wk | Hi-Depressive Symptoms6 wk |
| The Top 10 | **1** | 0 | 1 | 11 | 3 | 7 | 47.266 | 88.535 | 41.270 |
| **1** | 0 | 1 | 10 | 3 | 10 | 49.252 | 89.372 | 40.121 |
| **1** | 0 | 1 | 10 | 3 | 8 | 50.112 | 90.203 | 40.091 |
| **1** | 0 | 1 | 10 | 3 | 3 | 52.261 | 92.279 | 40.018 |
| **1** | 0 | 1 | 9 | 3 | 10 | 52.528 | 91.455 | 38.927 |
| **1** | 0 | 1 | 9 | 3 | 9 | 52.958 | 91.870 | 38.913 |
| **1** | 0 | 1 | 9 | 3 | 3 | 55.537 | 94.362 | 38.825 |
| **1** | 0 | 1 | 8 | 3 | 10 | 55.804 | 93.538 | 37.734 |
| **1** | 0 | 1 | 8 | 3 | 8 | 56.664 | 94.369 | 37.705 |
| **1** | 0 | 1 | 8 | 3 | 3 | 58.813 | 96.445 | 37.632 |
| The Bottom 10 | **0** | 1 | 0 | 3 | 9 | 9 | 67.664 | 42.086 | 25.579 |
| **0** | 1 | 0 | 3 | 9 | 8 | 68.094 | 42.501 | 25.593 |
| **0** | 1 | 0 | 3 | 9 | 3 | 70.244 | 44.577 | 25.667 |
| **0** | 1 | 0 | 1 | 8 | 8 | 72.511 | 46.488 | 26.023 |
| **0** | 1 | 0 | 3 | 10 | 11 | 68.939 | 41.433 | 27.506 |
| **0** | 1 | 0 | 3 | 10 | 10 | 69.369 | 41.849 | 27.521 |
| **0** | 1 | 0 | 3 | 10 | 9 | 69.799 | 42.264 | 27.535 |
| **0** | 1 | 0 | 3 | 10 | 6 | 71.089 | 43.510 | 27.579 |
| **0** | 1 | 0 | 3 | 10 | 3 | 72.379 | 44.755 | 27.623 |
|  | **0** | 1 | 0 | 1 | 9 | 9 | 74.216 | 46.251 | 27.965 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted values of the probability of Infant (I) gaze-on at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **I Gaze L1 is** bolded to indicate a significant self-contingency difference between symptom groups when predicting I gaze-on t0 from I Gaze L1 (see Table S3a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for I Gaze L1, the top ten behaviors are gaze-on (1) and the bottom ten behaviors are gaze-off (0). For the top ten probability values, given I gaze-on (1) at L1, the probability of I gaze-on at t0 is higher in the high- (vs. low-) depressive symptom group. For the bottom ten probability values, given I gaze-off (0) at L1, the probability of I gaze-on is lower in the high- (vs. low-) depressive symptom group.

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| **Table S2c***Infant Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Infant Gaze-on at t0 from Infant Gaze and Mother Touch* |
| **I Gaze L1** | I Gaze L2 | I Gaze L3 | M Touch L1 | M Touch L2 | M Touch L3 | Predicted Probability I Gaze t0 | Absolute Difference |
| Lo-Anxiety Symptoms6 wk | Hi-Anxiety Symptoms6 wk |
| The Top 10 | **0** | 0 | 0 | 3 | 10 | 11 | 19.652 | 41.335 | 21.683 |
| **0** | 0 | 0 | 3 | 11 | 10 | 22.217 | 42.729 | 20.512 |
| **0** | 0 | 0 | 3 | 10 | 10 | 20.082 | 39.429 | 19.347 |
| **0** | 0 | 0 | 6 | 10 | 11 | 9.824 | 28.839 | 19.014 |
| **0** | 1 | 0 | 3 | 10 | 11 | 68.939 | 87.138 | 18.199 |
| **0** | 0 | 0 | 3 | 9 | 10 | 17.947 | 36.128 | 18.181 |
| **0** | 0 | 0 | 6 | 9 | 11 | 7.689 | 25.538 | 17.849 |
| **0** | 0 | 0 | 5 | 10 | 10 | 13.530 | 31.098 | 17.567 |
| **0** | 0 | 0 | 9 | 11 | 11 | 2.131 | 19.642 | 17.511 |
| **0** | 0 | 0 | 3 | 10 | 9 | 20.512 | 37.522 | 17.010 |
| The Bottom 10 | **1** | 1 | 1 | 10 | 10 | 1 | 117.353 | 90.712 | 26.641 |
| **1** | 0 | 1 | 10 | 3 | 3 | 52.261 | 25.620 | 26.641 |
| **1** | 1 | 1 | 3 | 2 | 2 | 122.775 | 95.376 | 27.340 |
| **1** | 0 | 1 | 3 | 1 | 1 | 71.783 | 44.366 | 27.417 |
| **1** | 1 | 1 | 8 | 3 | 3 | 108.100 | 79.754 | 28.346 |
| **1** | 1 | 1 | 9 | 3 | 3 | 104.825 | 75.589 | 29.236 |
| **1** | 1 | 1 | 10 | 3 | 3 | 101.549 | 71.423 | 30.125 |
| **1** | 1 | 1 | 11 | 3 | 3 | 98.273 | 67.258 | 31.015 |
| **1** | 1 | 1 | 8 | 2 | 2 | 106.395 | 74.548 | 31.848 |
|  | **1** | 1 | 0 | 10 | 1 | 1 | 89.160 | 55.738 | 33.422 |

*Note.* Gaze = 1: gaze-on; gaze = 0: gaze-off. Predicted values of the probability of infant (I) gaze-on at t0 for 6-week high- (vs. low-) anxiety symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **I Gaze L1** is bolded to indicate a significant self-contingency difference between symptom groups when predicting I gaze-on at t0 from I Gaze L1 (see Table S3a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for I Gaze L1, the top ten behaviors are gaze-off (0) and the bottom ten behaviors are gaze-on (1). For the top ten probability values, given I gaze-off (0) at L1, the probability of I gaze-on at t0 is higher in the high- (vs. low-) anxiety symptom group. For the bottom ten probability values, given I gaze-on (1) at L1, the probability of I gaze-on at t0 is lower in the high- (vs. low-) anxiety symptom group.

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| **Table S2d***Infant Gaze – Mother Touch: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Mother Touch Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Touch |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | MT | -0.015 | 0.032 | 0.645 |
| M 6wk Anx  |  |  |  →  | MT | 0.006 | 0.032 | 0.841 |
| MT L1  |  |  | →  | MT | 0.840 | 0.016 | <.0001 |
| MT L2  |  |  | →  | MT | -0.148 | 0.020 | <.0001 |
| MT L3  |  |  | →  | MT | 0.102 | 0.016 | <.0001 |
| IG L1  |  |  | →  | MT | 0.021 | 0.030 | 0.493 |
| IG L2  |  |  | →  | MT | -0.001 | 0.037 | 0.977 |
| IG L3  |  |  | →  | MT | -0.031 | 0.030 | 0.302 |
| M 6wk Dep  | \* | MT L1  | →  | MT | 0.045 | 0.024 | 0.064 |
| **M 6wk Dep**  | **\*** | **MT L2**  | →  | **MT** | **-0.084** | **0.032** | **0.009** |
| **M 6wk Dep**  | **\*** | **MT L3**  | →  | **MT** | **0.073** | **0.024** | **0.003** |
| M 6wk Dep  | \* | IG L1  | →  | MT | -0.064 | 0.048 | 0.180 |
| **M 6wk Dep**  | **\*** | **IG L2**  |  →  | **MT** | **0.128** | **0.059** | **0.029** |
| M 6wk Dep  | \* | IG L3  | →  | MT | -0.036 | 0.048 | 0.445 |
| M 6wk Anx  | \* | MT L1  | →  | MT | -0.018 | 0.024 | 0.460 |
| M 6wk Anx  | \* | MT L2  | →  | MT | 0.027 | 0.032 | 0.389 |
| M 6wk Anx  | \* | MT L3  | →  | MT | -0.034 | 0.024 | 0.160 |
| M 6wk Anx  | \* | IG L1  | →  | MT | 0.049 | 0.046 | 0.290 |
| M 6wk Anx  | \* | IG L2  | →  | MT | -0.082 | 0.056 | 0.148 |
| M 6wk Anx  | \* | IG L3  | →  | MT | 0.020 | 0.046 | 0.667 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IG = Infant Gaze; MT = Mother Touch at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

**Table S2e**

*Mother Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Mother Touch at t0 from Mother Touch and Infant Gaze*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | M Touch L1 | **M Touch L2** | **M Touch L3** | I Gaze L1 | **I Gaze L2** | I Gaze L3 | Predicted Value M Touch t0 | Absolute Difference |
|  | Lo-Depressive Symptoms6 wk | Hi-Depressive Symptoms6 wk |
| The Top 10 | 9 | **1** | **10** | 0 | **1** | 0 | 10.677 | 11.766 | 1.089 |
| 10 | **3** | **9** | 0 | **1** | 0 | 11.119 | 12.012 | 0.893 |
| 10 | **3** | **10** | 0 | **1** | 1 | 11.138 | 12.006 | 0.869 |
| 9 | **3** | **9** | 0 | **1** | 0 | 10.280 | 11.128 | 0.848 |
| 9 | **3** | **10** | 0 | **1** | 1 | 10.298 | 11.122 | 0.824 |
| 10 | **2** | **9** | 1 | **1** | 0 | 11.322 | 12.130 | 0.807 |
| 10 | **3** | **9** | 0 | **1** | 1 | 11.035 | 11.832 | 0.796 |
| 10 | **3** | **10** | 1 | **1** | 0 | 11.277 | 12.072 | 0.796 |
| 10 | **6** | **11** | 0 | **1** | 0 | 10.880 | 11.666 | 0.786 |
| 10 | **3** | **11** | 1 | **1** | 1 | 11.296 | 12.067 | 0.771 |
| The Bottom 10 | 3 | **10** | **6** | 1 | **0** | 1 | 3.876 | 3.039 | 0.806 |
| 3 | **9** | **3** | 1 | **0** | 0 | 3.801 | 2.927 | 0.837 |
| 1 | **10** | **3** | 0 | **0** | 0 | 1.918 | 1.041 | 0.873 |
| 3 | **10** | **3** | 0 | **0** | 1 | 3.514 | 2.630 | 0.877 |
| 3 | **10** | **3** | 1 | **0** | 0 | 3.653 | 2.696 | 0.884 |
| 3 | **9** | **3** | 1 | **0** | 1 | 3.717 | 2.747 | 0.958 |
| 6 | **11** | **3** | 1 | **0** | 1 | 5.940 | 4.937 | 0.970 |
| 1 | **10** | **1** | 0 | **0** | 0 | 1.714 | 0.692 | 1.004 |
| 3 | **10** | **3** | 1 | **0** | 1 | 3.569 | 2.515 | 1.022 |
| 3 | **10** | **6** | 1 | **0** | 1 | 3.876 | 3.039 | 1.055 |

*Note.* Predicted values of the probability of Mother (M) Touch at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. I Gaze = Infant Gaze. **M Touch L2 and M Touch L3** are bolded to indicate significant self-contingency differences between symptom groups when predicting M Touch from M Touch L2 and M Touch L3; **I Gaze L2** is bolded to indicate a significant interactive contingency difference between symptom groups when predicting M Touch from I Gaze L2 (see Table S3d). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for M Touch L2, the top ten behaviors indicate mostly highly-arousing M Touch (1=high intensity touch, 2=rough touch, 3=centripetal/arousing touch) and the bottom ten behaviors indicate mostly positive M Touch (11=affectionate touch, 10=static touch, 9=playful touch). Regarding mother self-contingency, for the top ten predicted values, given M Touch tending toward negative values at L2 and positive values at L3, M Touch at t0 is more positive in the high- (vs. low-) depressive symptom group; for the bottom ten predicted values, given M Touch tending toward positive values at L2 and negative values at L3, M Touch at t0 is less positive in the high- (vs. low-) depressive symptom group. Regarding mother interactive contingency, for the top ten predicted values, given I gaze-on (1) at L2, M Touch at t0 is more positive in the high- (vs. low-) depressive symptom group; for the bottom ten predicted values, given I gaze-off (0) at L2, M Touch at t0 is less positive in the high- (vs. low-) depressive symptom group.

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| **Table S3a***Infant Facial Affect – Mother Facial Affect: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Infant Facial Affect 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Facial Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | IFA | 0.005 | 0.053 | 0.933 |
| M 6wk Anx  |  |  | →  | IFA | -0.001 | 0.053 | 0.990 |
| IFA L1  |  |  | →  | IFA | 0.633 | 0.016 | <.001 |
| IFA L2  |  |  | →  | IFA | 0.004 | 0.019 | 0.842 |
| IFA L3  |  |  | →  | IFA | 0.046 | 0.016 | 0.003 |
| MFA L1  |  |  | →  | IFA | 0.032 | 0.014 | 0.021 |
| MFA L2  |  |  | →  | IFA | 0.007 | 0.015 | 0.642 |
| MFA L3  |  |  | →  | IFA | 0.015 | 0.014 | 0.282 |
| M 6wk Dep  | \* | IFA L1  | →  | IFA | 0.013 | 0.026 | 0.616 |
| **M 6wk Dep**  | **\*** | **IFA L2**  | →  | **IFA** | **-0.074** | **0.031** | **0.017** |
| M 6wk Dep  | \* | IFA L3  | →  | IFA | 0.036 | 0.027 | 0.175 |
| **M 6wk Dep**  | **\*** | **MFA L1**  | →  | **IFA** | **-0.040** | **0.020** | **0.049** |
| M 6wk Dep  | \* | MFA L2  | →  | IFA | 0.020 | 0.022 | 0.380 |
| M 6wk Dep  | \* | MFA L3  | →  | IFA | -0.027 | 0.020 | 0.186 |
| **M 6wk Anx**  | **\*** | **IFA L1**  | →  | **IFA** | **-0.061** | **0.028** | **0.026** |
| **M 6wk Anx**  | **\*** | **IFA L2**  | →  | **IFA** | **0.152** | **0.033** | **<.001** |
| M 6wk Anx  | \* | IFA L3  | →  | IFA | -0.038 | 0.029 | 0.189 |
| M 6wk Anx  | \* | MFA L1  | →  | IFA | 0.015 | 0.020 | 0.466 |
| M 6wk Anx  | \* | MFA L2  | →  | IFA | -0.029 | 0.022 | 0.198 |
| M 6wk Anx  | \* | MFA L3  |  →  | IFA | 0.024 | 0.020 | 0.238 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IFA = Infant Facial Affect at t0; MFA = Mother Facial Affect; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S3b***Infant Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Infant Facial Affect at t0 from Infant Facial Affect and Mother Facial Affect* |
|  IFA L1 | **IFA L2** | IFA L3 | **MFA L1** | MFA L2 | MFA L3 | Predicted Value I Facial Affect t0 | Absolute Difference |
| Lo-Depressive Symptoms6 wk | Hi-Depressive Symptoms6 wk |
| The Top 10 | 40 | **20** | 40 | **10** | 60 | 60 | 43.003 | 46.596 | 3.593 |
| 20 | **20** | 85 | **61** | 61 | 61 | 33.768 | 37.070 | 3.303 |
| 20 | **20** | 85 | **61** | 60 | 61 | 33.762 | 37.049 | 3.287 |
| 55 | **40** | 55 | **10** | 10 | 10 | 52.385 | 55.513 | 3.128 |
| 57 | **40** | 55 | **10** | 40 | 40 | 54.176 | 57.159 | 2.983 |
| 56 | **56** | 56 | **10** | 70 | 10 | 53.456 | 56.396 | 2.940 |
| 70 | **57** | 56 | **10** | 61 | 10 | 62.268 | 65.174 | 2.907 |
| 55 | **55** | 55 | **10** | 60 | 10 | 52.718 | 55.524 | 2.806 |
| 20 | **20** | 40 | **61** | 61 | 10 | 31.079 | 33.861 | 2.782 |
| 57 | **56** | 55 | **10** | 61 | 10 | 53.993 | 56.767 | 2.774 |
| The Bottom 10 | 56 | **85** | 57 | **70** | 70 | 70 | 55.883 | 53.469 | 2.414 |
| 56 | **85** | 56 | **70** | 70 | 70 | 55.837 | 53.387 | 2.450 |
| 57 | **85** | 57 | **70** | 61 | 70 | 56.465 | 53.922 | 2.543 |
| 20 | **85** | 56 | **60** | 61 | 61 | 32.642 | 30.094 | 2.549 |
| 70 | **85** | 57 | **80** | 70 | 70 | 65.000 | 62.448 | 2.552 |
| 85 | **85** | 70 | **80** | 10 | 62 | 74.661 | 71.995 | 2.667 |
| 56 | **85** | 57 | **85** | 80 | 70 | 56.327 | 53.589 | 2.738 |
| 40 | **85** | 57 | **80** | 70 | 61 | 45.911 | 43.159 | 2.752 |
| 55 | **85** | 56 | **85** | 70 | 61 | 55.485 | 52.733 | 2.752 |
| 40 | **85** | 40 | **61** | 61 | 88 | 44.906 | 41.427 | 3.479 |

*Note.* Predicted values of the probability of Infant Facial Affect (IFA) at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. Mother Facial Affect = MFA. **IFA L2** is bolded to indicate a significant self-contingency difference between symptom groups when predicting IFA at t0 from IFA L2; **MFAL1** is bolded to indicate a significant interactive contingency difference between symptom groups when predicting IFA at t0 from MFA L1 (see Table S4a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for IFA L2, the top ten behaviors indicate mostly facial distress and the bottom ten behaviors indicate mostly positive facial affect. Regarding infant self-contingency, for the top ten predicted values, given IFA tending toward negative and interest at L2, the level of IFA at t0 is more positive in the high- (vs. low-) depressive symptom group; for the bottom ten predicted values, given IFA the most positive at L2, the level of IFA at t0 is less positive in the high- (vs. low-) depressive symptom group. Regarding infant interactive contingency, for the top ten predicted values, given MFA tending toward the most negative (values of 10) at L1, the level of IFA at t0 is more positive in the high- (vs. low-) depressive symptom group; for the bottom ten predicted values, given MFA tending toward positive (values of 70-85) at L1, the level of IFA at t0 is less positive in the high- (vs. low-) depressive symptom group.

**Table S3c**

*Infant Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Infant Facial Affect at t0 from Infant Facial Affect and Mother Facial Affect*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **IFA L1** | **IFA L2** | IFA L3 | MFA L1 | MFA L2 | MFA L3 | Predicted Value I Facial Affect t0 | Absolute Difference |
|  | Lo-Anxiety Symptoms6 wk | Hi-Anxiety Symptoms6 wk |
| The Top 10 | **20** | **85** | 56 | 60 | 61 | 61 | 32.642 | 39.285 | 6.643 |
| **40** | **85** | 40 | 61 | 61 | 88 | 44.906 | 51.459 | 6.552 |
| **20** | **85** | 70 | 61 | 61 | 60 | 33.303 | 39.412 | 6.109 |
| **40** | **85** | 55 | 61 | 70 | 70 | 45.434 | 50.865 | 5.431 |
| **40** | **85** | 57 | 80 | 70 | 61 | 45.911 | 51.320 | 5.409 |
| **57** | **85** | 57 | 70 | 61 | 70 | 56.465 | 61.097 | 4.632 |
| **57** | **85** | 85 | 70 | 10 | 62 | 57.379 | 61.991 | 4.612 |
| **56** | **85** | 56 | 61 | 70 | 80 | 55.723 | 60.330 | 4.607 |
| **55** | **85** | 56 | 85 | 70 | 61 | 55.485 | 60.073 | 4.587 |
| **56** | **85** | 57 | 61 | 61 | 70 | 55.599 | 60.185 | 4.586 |
| The Bottom 10 | **40** | **20** | 55 | 60 | 61 | 61 | 45.010 | 40.606 | 4.404 |
| **40** | **20** | 55 | 60 | 61 | 60 | 44.998 | 40.575 | 4.423 |
| **40** | **20** | 40 | 10 | 60 | 60 | 43.003 | 38.571 | 4.432 |
| **40** | **20** | 40 | 61 | 88 | 61 | 44.493 | 40.037 | 4.456 |
| **40** | **20** | 55 | 67 | 67 | 61 | 45.225 | 40.765 | 4.460 |
| **55** | **20** | 40 | 70 | 80 | 80 | 54.400 | 49.685 | 4.715 |
| **55** | **20** | 40 | 61 | 61 | 61 | 53.834 | 49.087 | 4.747 |
| **40** | **20** | 55 | 64 | 90 | 70 | 45.383 | 40.525 | 4.857 |
| **85** | **40** | 85 | 70 | 61 | 70 | 75.308 | 70.347 | 4.961 |
| **55** | **20** | 20 | 61 | 61 | 10 | 52.300 | 47.320 | 4.980 |

*Note.* Predicted values of the probability of Infant Facial Affect (IFA) at t0 for 6-week high- (vs. low-) anxiety symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. MFA = Mother Facial Affect. **IFA L1 and** **IFA L2** are bolded to indicate significant self-contingency differences between symptom groups when predicting IFA at t0 from IFA L1 and IFA L2 (see Table S4a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten behaviors represent reciprocals of one another. For example, for IFA L2, the top ten behaviors indicate mostly positive facial affect and the bottom ten behaviors indicate mostly facial distress. For the top ten predicted values, given IFA negative to interest at L1 and the most positive (85) at L2, infants of mothers with high- (vs. low-) anxiety symptoms are more likely to sustain positive affect facial expressions at t0. For the bottom ten predicted values, given IFA mild negative to neutral/interest at L1 and negative at L2 (20), infants of mothers with high- (vs. low-) anxiety symptoms at t0 are less positive.

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| **Table S3d***Infant Facial Affect – Mother Facial Affect: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Mother Facial Affect Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Facial Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | MFA | 0.032 | 0.064 | 0.620 |
| M 6wk Anx  |  |  | →  | MFA | -0.131 | 0.064 | 0.048 |
| MFA L1  |  |  | →  | MFA | 0.236 | 0.018 | <.0001 |
| MFA L2  |  |  |  →  | MFA | 0.051 | 0.019 | 0.006 |
| MFA L3  |  |  |  →  | MFA | 0.026 | 0.018 | 0.145 |
| IFA L1  |  |  | →  | MFA | 0.050 | 0.020 | 0.013 |
| IFA L2  |  |  | →  | MFA | 0.006 | 0.022 | 0.786 |
| IFA L3  |  |  | →  | MFA | 0.009 | 0.020 | 0.663 |
| M 6wk Dep  | \* | MFA L1  | →  | MFA | 0.016 | 0.026 | 0.533 |
| M 6wk Dep  | \* | MFA L2  | →  | MFA | -0.006 | 0.027 | 0.842 |
| **M 6wk Dep**  | **\*** | **MFA L3**  | →  | **MFA** | **-0.061** | **0.026** | **0.020** |
| M 6wk Dep  | \* | IFA L1  | →  | MFA | 0.043 | 0.034 | 0.204 |
| M 6wk Dep  | \* | IFA L2  | →  | MFA | -0.027 | 0.037 | 0.461 |
| M 6wk Dep  | \* | IFA L3  | →  | MFA | -0.018 | 0.034 | 0.603 |
| **M 6wk Anx**  | **\*** | **MFA L1**  | →  | **MFA** | **0.069** | **0.026** | **0.009** |
| M 6wk Anx  | \* | MFA L2  | →  | MFA | 0.012 | 0.027 | 0.658 |
| M 6wk Anx  | \* | MFA L3  | →  | MFA | 0.021 | 0.026 | 0.429 |
| M 6wk Anx  | \* | IFA L1  | →  | MFA | 0.003 | 0.036 | 0.942 |
| **M 6wk Anx**  | **\*** | **IFA L2**  | →  | **MFA** | **0.076** | **0.039** | **0.049** |
| M 6wk Anx  | \* | IFA L3  | →  | MFA | -0.037 | 0.037 | 0.306 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IFA = Infant Facial Affect; MFA = Mother Facial Affect at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

**Table S3e**

*Mother Facial Affect Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Mother Facial Affect at t0 from Mother Facial Affect and Infant Facial Affect*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | MFA L1 | MFA L2 | **MFA L3** | IFA L1 | IFA L2 | IFA L3 | Predicted Value M Facial Affect t0 | Absolute Difference |
|  | Lo-Depressive Symptoms6 wk | Hi-Depressive Symptoms6 wk |
| The Top 10 | 61 | 61 | **10** | 55 | 20 | 20 | 61.167 | 66.647 | 5.480 |
| 61 | 10 | **10** | 40 | 20 | 20 | 57.633 | 62.593 | 4.960 |
| 70 | 40 | **10** | 85 | 70 | 57 | 64.851 | 69.687 | 4.836 |
| 70 | 10 | **10** | 70 | 57 | 55 | 62.271 | 66.956 | 4.685 |
| 40 | 10 | **10** | 55 | 40 | 40 | 53.981 | 58.280 | 4.300 |
| 61 | 61 | **10** | 70 | 56 | 55 | 62.747 | 67.039 | 4.292 |
| 88 | 10 | **10** | 56 | 55 | 56 | 65.642 | 69.920 | 4.279 |
| 85 | 10 | **10** | 57 | 56 | 56 | 65.004 | 69.253 | 4.249 |
| 70 | 10 | **10** | 70 | 70 | 57 | 62.390 | 66.590 | 4.201 |
| 61 | 10 | **10** | 56 | 55 | 40 | 59.104 | 63.292 | 4.189 |
| The Bottom 10 | 60 | 70 | **85** | 40 | 55 | 55 | 63.064 | 61.134 | 1.930 |
| 61 | 64 | **90** | 20 | 40 | 20 | 61.391 | 59.415 | 1.975 |
| 70 | 80 | **88** | 40 | 55 | 55 | 66.010 | 64.005 | 2.004 |
| 61 | 70 | **70** | 40 | 85 | 55 | 63.131 | 61.121 | 2.010 |
| 61 | 61 | **80** | 20 | 40 | 55 | 61.358 | 59.242 | 2.116 |
| 60 | 61 | **85** | 40 | 70 | 56 | 62.727 | 60.317 | 2.410 |
| 60 | 61 | **61** | 20 | 85 | 56 | 60.972 | 58.458 | 2.514 |
| 60 | 88 | **88** | 40 | 57 | 70 | 64.240 | 61.631 | 2.609 |
| 61 | 61 | **88** | 40 | 85 | 40 | 62.978 | 60.245 | 2.733 |
| 61 | 61 | **60** | 20 | 85 | 70 | 61.334 | 58.590 | 2.744 |

*Note.* Predicted values of the probability of Mother Facial Affect (MFA) at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **MFA L3**is bolded to indicate a significant self-contingency difference between symptom groups when predicting MFA from MFA L3 (see Table S4d). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for MFA L3, the top ten behaviors indicate mostly negative facial affect and the bottom ten behaviors indicate mostly positive facial affect. For the top ten predicted values, given MFA the most negative (values of 10) at L3, the level of MFA at t0 is more positive in the high- (vs. low-) depressive symptom group. For the bottom ten predicted values, given MFA tending toward positive at L3, the level of MFA at t0 is less positive in the high- (vs. low-) depressive symptom group.

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| **Table S3f***Mother Predicted Values for High- (vs. Low-) Maternal Anxiety Symptoms: Predicting Mother Facial Affect at t0 from Mother Facial Affect and Infant Facial Affect* |
|  | **MFA L1** | MFA L2 | MFA L3 | IFA L1 | **IFA L2** | IFA L3 | Predicted Value M Facial Affect t0 | Absolute Difference |
|  | Lo-Anxiety Symptoms6 wk | Hi-Anxiety Symptoms6 wk |
| The Top 10 | **85** | 80 | 70 | 56 | **85** | 57 | 70.311 | 73.592 | 3.281 |
| **85** | 70 | 61 | 55 | **85** | 56 | 69.493 | 72.508 | 3.016 |
| **80** | 70 | 70 | 70 | **85** | 57 | 69.490 | 72.352 | 2.862 |
| **80** | 70 | 60 | 85 | **85** | 57 | 70.158 | 72.861 | 2.703 |
| **80** | 61 | 61 | 85 | **85** | 56 | 69.714 | 72.375 | 2.661 |
| **80** | 70 | 61 | 40 | **85** | 57 | 67.396 | 69.973 | 2.578 |
| **61** | 61 | 88 | 40 | **85** | 40 | 62.978 | 65.494 | 2.516 |
| **70** | 85 | 70 | 57 | **85** | 56 | 67.082 | 69.446 | 2.363 |
| **80** | 70 | 70 | 85 | **85** | 70 | 70.561 | 72.868 | 2.307 |
| **70** | 70 | 70 | 85 | **85** | 57 | 68.062 | 70.288 | 2.225 |
| The Bottom 10 | **10** | 10 | 10 | 40 | **55** | 55 | 46.256 | 39.514 | 6.743 |
| **10** | 60 | 61 | 20 | **20** | 20 | 48.260 | 41.443 | 6.816 |
| **10** | 61 | 60 | 20 | **20** | 20 | 48.285 | 41.460 | 6.825 |
| **10** | 10 | 61 | 55 | **40** | 55 | 48.406 | 41.357 | 7.050 |
| **10** | 40 | 40 | 57 | **40** | 55 | 49.514 | 42.399 | 7.114 |
| **10** | 10 | 10 | 57 | **57** | 70 | 47.488 | 40.293 | 7.195 |
| **10** | 10 | 60 | 20 | **20** | 20 | 45.681 | 38.235 | 7.445 |
| **10** | 10 | 10 | 40 | **40** | 40 | 45.981 | 38.520 | 7.460 |
| **10** | 60 | 60 | 40 | **20** | 40 | 49.691 | 41.991 | 7.701 |
| **10** | 10 | 10 | 55 | **40** | 55 | 47.074 | 38.966 | 8.108 |

*Note.* Predicted values of the probability of Mother Facial Affect (MFA) at t0 for 6-week high- (vs. low-) anxiety symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. Infant Facial Affect = IFA. **MFA L1** is bolded to indicate a significant self-contingency difference between symptom groupswhen predicting MFA at t0 from MFA L1; **IFA L2**is bolded to indicate a significant interactive contingency difference between symptom groups when predicting MFA at t0 from IFA L2 (see Table S4d). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for MFA L1, the top ten behaviors indicate mostly positive facial affect and the bottom ten behaviors indicate mostly negative facial affect. Regarding mother self-contingency, for the top ten predicted values, given MFA tending toward positive at L1, the level of MFA at t0 is more positive in the high- (vs. low-) anxiety symptom group; for the bottom ten predicted values, given MFA tending toward the most negative at L1, the level of MFA at t0 is less positive in the high- (vs. low-) anxiety symptom group. Regarding mother interactive contingency, for the top ten predicted values, given IFA tending toward the most positive (values of 85) at L2, the level of MFA at t0 is more positive in the high- (vs. low-) anxiety symptom group; for the bottom ten predicted values, given IFA tending toward negative at L2, the level of MFA at t0 is less positive in the high- (vs. low-) anxiety symptom group.

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| **Table S4a***Infant Vocal Affect – Mother Touch: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Infant Vocal Affect 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Vocal Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk Dep  |  |  | →  | IVA | 0.039 | 0.070 | 0.585 |
| M 6wk Anx  |  |  | →  | IVA | -0.038 | 0.070 | 0.595 |
| IVA L1  |  |  | →  | IVA | 0.228 | 0.016 | <.0001 |
| IVA L2  |  |  | →  | IVA | 0.070 | 0.017 | <.0001 |
| IVA L3  |  |  | →  | IVA | 0.067 | 0.016 | <.0001 |
| MT L1  |  |  | →  | IVA | 0.001 | 0.019 | 0.940 |
| MT L2  |  |  | →  | IVA | 0.001 | 0.020 | 0.977 |
| MT L3  |  |  | →  | IVA | -0.002 | 0.019 | 0.915 |
| **M 6wk Dep**  | **\*** | **IVA L1**  | →  | IVA | **-0.074** | **0.023** | **0.001** |
| M 6wk Dep  | \* | IVA L2  | →  | IVA | -0.014 | 0.023 | 0.558 |
| M 6wk Dep  | \* | IVA L3  | →  | IVA | 0.019 | 0.023 | 0.415 |
| M 6wk Dep  | \* | MT L1  | →  | IVA | -0.001 | 0.030 | 0.982 |
| M 6wk Dep  | \* | MT L2  | →  | IVA | -0.013 | 0.0318 | 0.691 |
| M 6wk Dep  | \* | MT L3  | →  | IVA | 0.037 | 0.030 | 0.207 |
| M 6wk Anx  | \* | IVA L1  | →  | IVA | 0.039 | 0.024 | 0.103 |
| M 6wk Anx  | \* | IVA L2  | →  | IVA | 0.003 | 0.024 | 0.910 |
| M 6wk Anx  | \* | IVA L3  | →  | IVA | -0.012 | 0.024 | 0.615 |
| M 6wk Anx  | \* | MT L1  | →  | IVA | -0.018 | 0.029 | 0.553 |
| M 6wk Anx  | \* | MT L2  |  →  | IVA | 0.003 | 0.031 | 0.926 |
| M 6wk Anx  | \* | MT L3  | →  | IVA | 0.022 | 0.029 | 0.450 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IVA = Infant Vocal Affect at t0; MT = Mother Touch; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S4b***Infant Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Infant Vocal Affect at t0 from Infant Vocal Affect and Mother Touch* |
|  | **IVA L1** | IVA L2 | IVA L3 | M Touch L1 | M Touch L2 | M Touch L3 | Predicted Value I Vocal Affect t0 | Absolute Difference |
|  | Lo-depressive Symptoms6 wk | Hi-Depressive Symptoms6 wk |
| The Top 10 | **1** | 3 | 4 | 8 | 8 | 8 | 3.530 | 3.790 | 0.261 |
| **1** | 3 | 3 | 9 | 10 | 10 | 3.464 | 3.716 | 0.253 |
| **2** | 2 | 5 | 3 | 3 | 10 | 3.746 | 3.996 | 0.250 |
| **1** | 3 | 3 | 10 | 9 | 9 | 3.464 | 3.711 | 0.247 |
| **1** | 3 | 3 | 8 | 8 | 8 | 3.464 | 3.706 | 0.242 |
| **2** | 2 | 5 | 10 | 9 | 10 | 3.749 | 3.982 | 0.233 |
| **2** | 3 | 5 | 7 | 7 | 10 | 3.816 | 4.041 | 0.225 |
| **2** | 3 | 6 | 8 | 8 | 8 | 3.883 | 4.108 | 0.225 |
| **2** | 3 | 5 | 10 | 10 | 10 | 3.817 | 4.034 | 0.217 |
| **4** | 4 | 4 | 8 | 8 | 8 | 4.920 | 5.133 | 0.213 |
| The Bottom 10 | **6** | 6 | 4 | 8 | 9 | 9 | 4.844 | 4.709 | 0.134 |
| **6** | 4 | 5 | 3 | 9 | 3 | 4.774 | 4.639 | 0.135 |
| **6** | 4 | 4 | 3 | 3 | 3 | 4.708 | 4.570 | 0.138 |
| **6** | 4 | 5 | 3 | 10 | 3 | 4.774 | 4.636 | 0.138 |
| **6** | 6 | 5 | 8 | 3 | 3 | 4.911 | 4.764 | 0.147 |
| **6** | 5 | 5 | 9 | 9 | 3 | 4.844 | 4.694 | 0.150 |
| **6** | 5 | 4 | 3 | 3 | 3 | 4.776 | 4.625 | 0.151 |
| **6** | 5 | 2 | 9 | 9 | 9 | 4.645 | 4.487 | 0.157 |
| **6** | 6 | 3 | 3 | 3 | 3 | 4.778 | 4.596 | 0.183 |
|  | **4** | 4 | 4 | 8 | 8 | 8 | 6.484 | 5.795 | 0.689 |

*Note.* Predicted values of Infant Vocal Affect (IVA) at t0 for 6-week high- (low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. **IVA L1** isbolded to indicate a significant difference between symptom groups when predicting IVA at t0 from IVA L1 (see Table S2a). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for IVA L1, the top ten behaviors indicate mostly vocal distress and the bottom ten behaviors indicate mostly positive vocal affect. For the top ten predicted values, given IVA tending toward negative at L1 (values of 1-2), IVA at t0 is more positive in the high- (vs. low-) depressive symptom group. For the bottom ten predicted values, given IVA tending toward positive at L1 (values of 6), IVA at t0 is less positive in the high- (vs. low-) depressive symptom group.

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| **Table S4c***Infant Vocal Affect – Mother Touch: Associations of Maternal 6-week Depressive and Anxiety Symptoms with Mother Touch Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Touch |
| Variable |  |  |  |  | *β* |  *SE* | *p* |
| M 6wk Dep  |  |  | →  | MT | -0.004 | 0.022 | 0.877 |
| M 6wk Anx  |  |  | →  | MT | 0.004 | 0.022 | 0.866 |
| MT L1  |  |  | →  | MT | 0.891 | 0.015 | <.0001 |
| MT L2  |  |  | →  | MT | -0.217 | 0.020 | <.0001 |
| MT L3  |  |  | →  | MT | 0.129 | 0.015 | <.0001 |
| IVA L1  |  |  | →  | MT | -0.009 | 0.013 | 0.494 |
| IVA L2  |  |  | →  | MT | -0.002 | 0.016 | 0.880 |
| IVA L3  |  |  | →  | MT | 0.005 | 0.013 | 0.677 |
| M 6wk Dep  | \* | MT L1  |  →  | MT | 0.039 | 0.024 | 0.104 |
| **M 6wk Dep**  | **\*** | **MT L2**  | →  | **MT** | **-0.075** | **0.032** | **0.020** |
| **M 6wk Dep**  | **\*** | **MT L3**  | →  | **MT** | **0.067** | **0.024** | **0.005** |
| M 6wk Dep  | \* | IVA L1  | →  | MT | 0.024 | 0.018 | 0.195 |
| M 6wk Dep  | \* | IVA L2  | →  | MT | -0.001 | 0.022 | 0.971 |
| M 6wk Dep  | \* | IVA L3  | →  | MT | 0.001 | 0.018 | 0.940 |
| M 6wk Anx  | \* | MT L1  | →  | MT | -0.013 | 0.024 | 0.593 |
| M 6wk Anx  | \* | MT L2  | →  | MT | 0.021 | 0.032 | 0.508 |
| M 6wk Anx  | \* | MT L3  | →  | MT | -0.031 | 0.024 | 0.193 |
| M 6wk Anx  | \* | IVA L1  | →  | MT | -0.014 | 0.019 | 0.458 |
| M 6wk Anx  | \* | IVA L2  | →  | MT | 0.003 | 0.023 | 0.911 |
| M 6wk Anx  | \* | IVA L3  | →  | MT | -0.009 | 0.019 | 0.637 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk Dep = Maternal 6-week Depressive Symptoms; M 6wk Anx = Maternal 6-week Anxiety Symptoms; IVA = Infant Vocal Affect;

MT = Mother Touch at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S4d***Mother Predicted Values for High- (vs. Low-) Maternal Depressive Symptoms: Predicting Mother Touch at t0 from Infant Vocal Affect and Mother Touch* |
|  | M Touch L1 | **M Touch L2** | **M Touch L3** | IVA L1 | IVA L2 | IVA L3 | Predicted Value M Touch t0 | Absolute Difference |
|  | Lo-depressive Symptoms 6 wk | Hi-Depressive Symptoms 6 wk |
| The Top 10 | 8 | **8** | **8** | 4 | 4 | 4 | 8.125 | 9.220 | 1.095 |
| 10 | **3** | **10** | 5 | 3 | 5 | 11.658 | 12.351 | 0.693 |
| 9 | **1** | **10** | 4 | 4 | 5 | 11.232 | 11.922 | 0.690 |
| 10 | **3** | **10** | 5 | 5 | 5 | 11.636 | 12.322 | 0.686 |
| 10 | **3** | **10** | 5 | 4 | 4 | 11.622 | 12.305 | 0.683 |
| 10 | **3** | **10** | 5 | 5 | 4 | 11.611 | 12.290 | 0.679 |
| 10 | **3** | **10** | 5 | 6 | 4 | 11.600 | 12.275 | 0.676 |
| 10 | **3** | **10** | 5 | 5 | 3 | 11.586 | 12.258 | 0.673 |
| 9 | **3** | **10** | 5 | 5 | 4 | 10.720 | 11.361 | 0.640 |
| 10 | **3** | **11** | 4 | 4 | 4 | 11.792 | 12.431 | 0.639 |
| The Bottom 10 | 3 | **10** | **3** | 4 | 4 | 4 | 3.009 | 2.313 | 0.697 |
| 3 | **10** | **3** | 4 | 5 | 4 | 2.998 | 2.298 | 0.700 |
| 3 | **10** | **3** | 4 | 4 | 2 | 2.959 | 2.249 | 0.709 |
| 2 | **8** | **2** | 3 | 3 | 4 | 2.477 | 1.717 | 0.760 |
| 3 | **11** | **3** | 4 | 4 | 4 | 2.792 | 2.020 | 0.772 |
| 1 | **10** | **3** | 4 | 4 | 4 | 1.228 | 0.454 | 0.774 |
| 3 | **10** | **3** | 3 | 6 | 6 | 3.079 | 2.277 | 0.802 |
| 3 | **10** | **3** | 3 | 5 | 5 | 3.065 | 2.260 | 0.805 |
| 3 | **10** | **3** | 3 | 3 | 3 | 3.036 | 2.226 | 0.810 |
| 1 | **10** | **1** | 3 | 3 | 3 | 0.998 | -0.025 | 1.023 |

*Note.* Predicted values of Mother Touch (M Touch) at t0 for 6-week high- (vs. low-) depressive symptom groups were generated by the Individual Seconds time-series model and are ranked from highest to lowest absolute difference. IVA = Infant Vocal Affect. **M Touch L2 and M Touch L3** are bolded to indicate significant differences between symptom groups when predicting M Touch from M Touch L2 and M Touch L3 (Table S2c). This table presents the exemplars of the top ten combinations of behaviors, and the bottom ten combinations of behaviors, resulting in the greatest absolute differences between symptom groups. The top ten and the bottom ten combinations of behaviors represent reciprocals of one another. For example, for M Touch L2, the top ten behaviors indicate mostly highly-arousing M Touch and the bottom ten behaviors indicate mostly positive M Touch. For the top ten predicted values, given M Touch tending toward negative at L2 (values of 1-3) and positive at L3 (values 10-11), M Touch at t0 is more positive in the high- (vs. low) depressive symptom group. For the bottom ten predicted values, given M Touch tending toward positive at L2 (values of 10-11) and negative at L3 (values 1-3), M Touch at t0 is less positive in the high- (vs. low-) depressive symptom group.

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| **Table S5a***Infant Gaze – Mother Gaze: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Infant Gaze 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | IG | 7.210 | 13.712 | 0.599 |
| IG L1  |  |  | →  | IG | 58.072 | 3.258 |  <.0001 |
| IG L2  |  |  | →  | IG | 49.778 | 3.315 |  <.0001 |
| IG L3  |  |  | →  | IG | 10.540 | 3.460 | 0.002 |
| MG L1  |  |  | →  | IG | 2.537 | 3.179 | 0.425 |
| MG L2  |  |  | →  | IG | -3.683 | 3.115 | 0.237 |
| MG L3  |  |  | →  | IG | 2.739 | 3.165 | 0.387 |
| M 6wk High  | \* | IG L1  | →  | IG | 8.255 | 4.849 | 0.089 |
| **M 6wk High**  | **\*** | **IG L2**  | **→**  | **IG** | **-17.448** | **5.174** | **0.001** |
| M 6wk High | \* | IG L3  | →  | IG | 4.365 | 5.191 | 0.400 |
| M 6wk High | \* | MG L1  | →  | IG | 3.882 | 6.903 | 0.574 |
| M 6wk High  | \* | MG L2  | →  | IG | 4.337 | 6.904 | 0.530 |
| M 6wk High  | \* | MG L3  | →  | IG | -3.969 | 6.919 | 0.566 |
| *Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IG = Infant Gaze at t0; MG = Mother Gaze; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior). |

**Analyses of Comorbid 6-week Depressive and Anxiety Symptoms**

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| **Table S5b***Infant Gaze – Mother Gaze: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Mother Gaze Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | MG | -17.229 | 11.578 | 0.137 |
| MG L1  |  |  | →  | MG | -6.949 | 3.261 | 0.033 |
| MG L2  |  |  | →  | MG | 39.570 | 2.662 | <.0001  |
| MG L3  |  |  | →  | MG | 10.702 | 3.069 | 0.001 |
| IG L1  |  |  | →  | MG | 23.003 | 4.143 | <.0001  |
| IG L2  |  |  | →  | MG | -3.405 | 4.206 | 0.418 |
| IG L3  |  |  | →  | MG | 0.166 | 4.171 | 0.968 |
| **M 6wk High**  | **\*** | **MG L1**  | **→**  | **MG** | **15.230** | **7.441** | **0.041** |
| M 6wk High | \* | MG L2  | →  | MG | -8.962 | 6.591 | 0.174 |
| M 6wk High  | \* | MG L3  | →  | MG | 0.382 | 7.256 | 0.958 |
| M 6wk High | \* | IG L1  | →  | MG | 10.782 | 6.161 | 0.080 |
| M 6wk High  | \* | IG L2  | →  | MG | 7.547 | 6.491 | 0.245 |
| M 6wk High | \* | IG L3  | →  | MG | -0.262 | 6.374 | 0.967 |
| *Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IG = Infant Gaze; MG = Mother Gaze at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior). |

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| **Table S6a***Infant Gaze – Mother Touch: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Infant Gaze 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Gaze |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | IG | 11.109 | 10.397 | 0.285 |
| IG L1  |  |  | →  | IG | 59.120 | 3.242 | <.0001  |
| IG L2  |  |  | →  | IG | 49.841 | 3.295 | <.0001  |
| IG L3  |  |  | →  | IG | 10.494 | 3.431 | 0.002 |
| MT L1  |  |  | →  | IG | -8.574 | 4.039 | 0.034 |
| MT L2  |  |  |  →  | IG | 4.417 | 4.356 | 0.311 |
| MT L3  |  |  | →  | IG | 1.427 | 4.052 | 0.725 |
| M 6wk High  | \* | IG L1  | →  | IG | 8.308 | 4.866 | 0.088 |
| **M 6wk High**  | **\*** | **IG L2**  | **→**  | **IG** | **-17.223** | **5.159** | **0.001** |
| M 6wk High  | \* | IG L3  | →  | IG | 4.243 | 5.157 | 0.411 |
| M 6wk High | \* | MT L1  | →  | IG | -0.082 | 3.809 | 0.983 |
| M 6wk High  | \* | MT L2  | →  | IG | 1.803 | 4.087 | 0.659 |
| M 6wk High  | \* | MT L3  | →  | IG | 2.587 | 3.775 | 0.493 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IG = Infant Gaze at t0; MT = Mother Touch; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S6b***Infant Gaze – Mother Touch: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Mother Touch Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Touch |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  |  →  | MT | -0.014 | 0.038 | 0.723 |
| MT L1  |  |  | →  | MT | 0.858 | 0.013 | <.0001  |
| MT L2  |  |  | →  | MT | -0.158 | 0.017 | <.0001  |
| MT L3  |  |  | →  | MT | 0.107 | 0.013 | <.0001  |
| IG L1  |  |  | →  | MT | 0.033 | 0.025 | 0.174 |
| IG L2  |  |  | →  | MT | -0.021 | 0.030 | 0.476 |
| IG L3  |  |  | →  | MT | -0.027 | 0.025 | 0.270 |
| M 6wk High  | \* | MT L1  | →  | MT | -0.038 | 0.026 | 0.148 |
| M 6wk High  | \* | MT L2  | →  | MT | -0.042 | 0.034 | 0.219 |
| M 6wk High  | \* | MT L3  | →  | MT | 0.038 | 0.026 | 0.148 |
| M 6wk High  | \* | IG L1  | →  | MT | -0.050 | 0.050 | 0.316 |
| **M 6wk High**  | **\*** | **IG L2**  |  **→**  | **MT** | **0.119** | **0.061** | **0.052** |
| M 6wk High  | \* | IG L3  | →  | MT | -0.021 | 0.050 | 0.667 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows marginal effect. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IG = Infant Gaze; MT = Mother Touch at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S7a***Infant Facial Affect – Mother Facial Affect: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Infant Facial Affect 4-Month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Facial Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | IFA | 0.023 | 0.046 | 0.621 |
| IFA L1  |  |  | →  | IFA | 0.836 | 0.013 | <.0001  |
| IFA L2  |  |  | →  | IFA | -0.205 | 0.017 | <.0001  |
| IFA L3  |  |  | →  | IFA | 0.120 | 0.013 | <.0001  |
| MFA L1  |  |  | →  | IFA | 0.028 | 0.011 | 0.011 |
| MFA L2  |  |  | →  | IFA | -0.004 | 0.013 | 0.754 |
| MFA L3  |  |  | →  | IFA | 0.011 | 0.011 | 0.311 |
| M 6wk High | \* | IFA L1  | →  | IFA | -0.034 | 0.036 | 0.347 |
| **M 6wk High**  | **\*** | **IFA L2**  | **→**  | **IFA** | **0.120** | **0.046** | **0.010** |
| **M 6wk High** | **\*** | **IFA L3**  | **→**  | **IFA** | **-0.091** | **0.037** | **0.014** |
| M 6wk High  | \* | MFA L1  | →  | IFA | -0.027 | 0.020 | 0.175 |
| M 6wk High  | \* | MFA L2  | →  | IFA | 0.012 | 0.023 | 0.594 |
| M 6wk High  | \* | MFA L3  | →  | IFA | 0.003 | 0.020 | 0.861 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IFA = Infant Facial Affect at t0; MFA = Mother Facial Affect; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S7b***Infant Facial Affect – Mother Facial Affect: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Mother Facial Affect Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Facial Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | MFA | -0.068 | 0.073 | 0.353 |
| MFA L1  |  |  | →  | MFA | 0.263 | 0.015 | <.0001  |
| MFA L2  |  |  |  →  | MFA | 0.052 | 0.015 | 0.001 |
| MFA L3  |  |  |  →  | MFA | 0.025 | 0.014 | 0.087 |
| IFA L1  |  |  | →  | MFA | 0.060 | 0.017 | 0.000 |
| IFA L2  |  |  | →  | MFA | 0.009 | 0.018 | 0.638 |
| IFA L3  |  |  | →  | MFA | -0.006 | 0.017 | 0.737 |
| M 6wk High  | \* | MFA L1  | →  | MFA | 0.039 | 0.026 | 0.129 |
| M 6wk High | \* | MFA L2  | →  | MFA | 0.012 | 0.026 | 0.655 |
| **M 6wk High**  | **\*** | **MFA L3**  | **→**  | **MFA** | **-0.050** | **0.026** | **0.052** |
| M 6wk High  | \* | IFA L1  | →  | MFA | 0.039 | 0.047 | 0.414 |
| M 6wk High  | \* | IFA L2  | →  | MFA | 0.074 | 0.050 | 0.139 |
| M 6wk High  | \* | IFA L3  | →  | MFA | -0.013 | 0.047 | 0.780 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows marginal effect. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IFA = Infant Facial Affect; MFA = Mother Facial Affect at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S8a***Infant Vocal Affect – Mother Touch: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Infant Vocal Affect 4-month Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Infant Vocal Affect |
| Variable |  |  |  |  | *β* | *SE* | *p* |
| M 6wk High  |  |  | →  | IVA | -0.060 | 0.076 | 0.438 |
| IVA L1  |  |  | →  | IVA | 0.209 | 0.012 | <.0001  |
| IVA L2  |  |  | →  | IVA | 0.087 | 0.013 | <.0001  |
| IVA L3  |  |  | →  | IVA | 0.076 | 0.012 | <.0001  |
| MT L1  |  |  | →  | IVA | 0.004 | 0.015 | 0.790 |
| MT L2  |  |  | →  | IVA | -0.001 | 0.016 | 0.972 |
| MT L3  |  |  | →  | IVA | 0.006 | 0.015 | 0.691 |
| **M 6wk High**  | **\*** | **IVA L1**  | **→**  | **IVA** | **-0.100** | **0.027** | **0.000** |
| **M 6wk High**  | **\*** | **IVA L2**  | **→**  | **IVA** | **-0.089** | **0.027** | **0.001** |
| M 6wk High  | \* | IVA L3  | →  | IVA | -0.025 | 0.027 | 0.342 |
| M 6wk High  | \* | MT L1  | →  | IVA | -0.048 | 0.032 | 0.132 |
| M 6wk High  | \* | MT L2  | →  | IVA | -0.013 | 0.033 | 0.691 |
| **M 6wk High**  | **\*** | **MT L3**  | **→**  | **IVA** | **0.062** | **0.032** | **0.049** |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. Bold type shows significant effects. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IVA = Infant Vocal Affect at t0; MT = Mother Touch; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

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| **Table S8b***Infant Vocal Affect – Mother Touch: Associations of Maternal Comorbid 6-week Depressive and Anxiety Symptoms with Mother Touch Self- and Interactive Contingency by Individual Seconds Time-Series Models* |
|  |  |  | Mother Touch |
| Variable |  |  |  |  | *β* |  *SE* | *p* |
| M 6wk High  |  |  | →  | MT | 0.014 | 0.024 | 0.558 |
| MT L1  |  |  | →  | MT | 0.912 | 0.012 | <.0001  |
| MT L2  |  |  | →  | MT | -0.231 | 0.017 | <.0001  |
| MT L3  |  |  | →  | MT | 0.134 | 0.012 | <.0001  |
| IVA L1  |  |  | →  | MT | -0.005 | 0.010 | 0.654 |
| IVA L2  |  |  | →  | MT | -0.006 | 0.012 | 0.637 |
| IVA L3  |  |  | →  | MT | 0.009 | 0.010 | 0.358 |
| M 6wk High  | \* | MT L1  |  →  | MT | -0.042 | 0.026 | 0.101 |
| M 6wk High | \* | MT L2  | →  | MT | -0.033 | 0.034 | 0.333 |
| M 6wk High  | \* | MT L3  | →  | MT | 0.035 | 0.026 | 0.178 |
| M 6wk High  | \* | IVA L1  | →  | MT | 0.002 | 0.022 | 0.934 |
| M 6wk High  | \* | IVA L2  | →  | MT | 0.014 | 0.025 | 0.565 |
| M 6wk High  | \* | IVA L3  | →  | MT | -0.029 | 0.022 | 0.178 |

*Note.* Models included intercept and controlled socio-demographic variables (infant gender, maternal education and age). Beta values are standardized coefficients of fixed effects in Individual Seconds time series models. Arrows show the direction of prediction, and the right arrow is the predicted variable while the left is predictor. M 6wk High = Maternal 6-week Comorbid High Depressive and Anxiety Symptoms; IVA = Infant Vocal Affect; MT = Mother Touch at t0; L1 = Lag 1 (1 s prior); L2 = Lag 2 (2 s prior); L3 = Lag 3 (3 s prior).

**Table S9**

*Summary of the Results of Maternal 6-week High Depressive, High Anxiety, and Comorbid High Depressive and Anxiety Symptoms Associated with Infant and Mother Self- and Interactive Contingency at 4 Months*

|  |  |
| --- | --- |
|  | Predicting Infant Predicting Mother |
|  | Infant self-contingency(I→I) | Infant interactive contingency (M→I) | Mother self-contingency  (M→M) | Mother interactive contingency(I→M) |
|  | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| **I Gaze-M Gaze** |  |
| High depressive symptoms | ↑ |  |  |  |  |  |  | ↑ |  |  |  |  |
| High anxiety symptoms | ↓ |  |  |  |  |  | ↑ | ↓ |  |  |  |  |
| Both high depressive & anxious |  | ↓ |  |  |  |  | ↑ |  |  |  |  |  |
| **I Gaze-M Touch** |  |  |  |  |  |  |  |  |  |  |  |  |
| High depressive symptoms | ↑ |  |  |  |  |  |  | ↓ | ↑ |  | ↑ |  |
| High anxiety symptoms | ↓ |  |  |  |  |  |  |  |  |  |  |  |
| Both high depressive & anxious |  | ↓ |  |  |  |  |  |  |  |  | ↑m |  |
| **I Facial Affect-M Facial Affect** |  |  |  |  |  |  |  |  |  |  |  |  |
| High depressive symptoms |  | ↓ |  | ↓ |  |  |  |  | ↓ |  |  |  |
| High anxiety symptoms | ↓ | ↑ |  |  |  |  | ↑ |  |  |  | ↑ |  |
| Both high depressive & anxious |  | ↑ | ↓ |  |  |  |  |  | ↓m |  |  |  |
| **I Vocal Affect-M Touch** |  |
| High depressive symptoms | ↓ |  |  |  |  |  |  | ↓ | ↑ |  |  |  |
| High anxiety symptoms |  |  |  |  |  |  |  |  |  |  |  |  |
| Both high depressive & anxious | ↓ | ↓ |  |  |  | ↑ |  |  |  |  |  |  |

*Note 1.* Using multi-level individual seconds time-series models, current behavior at t0 was predicted from the 3 prior individual seconds; L1 = one sec prior; L2 = two sec prior; L3 = three sec prior. Each second controlled for the other two. Entries represent increased (↑) contingency or decreased (↓) contingency with maternal high (vs. low) depressive, high anxious or comorbid symptoms. I→ I = infant self-contingency; M→ I = infant interactive contingency. I = Infant; M = Mother. M→ M = mother self-contingency; I→ M = mother interactive contingency. m = marginal at *p* = .052.

*Note 2.* In response to questions of the reviewers, we examined the patterns of contingency in dyads with *both* high maternal 6-week depressive and anxiety symptoms (labeled “comorbid depressive and anxiety symptoms”) as a further analysis. Overall, the comorbid analysis generated very little that was new. With only one exception (higher infant interactive coordination with mother touch), contingency findings followed the pattern of results that we had previously documented for either dyads with high maternal depressive or anxiety symptoms: some of the comorbid findings followed the dyads with high maternal depressive symptoms, and some followed the dyads with high maternal anxiety symptoms.

*Infants.* In infants of dyads with mothers endorsing comorbid depressive and anxiety symptoms, one completely new *interactive contingency* pattern emerged: higher infant vocal affect coordination with mother touch. *Self-contingency* findings of infants of mothers endorsing comorbid symptoms were the same as those of infants of mothers endorsing either high depressive or anxiety symptoms, although at different lags. For example, in Table S9 above, in the pairing I Gaze-M Gaze, in the comorbid group, Infant self-contingency (I→I) shows lowered self-contingency at L2, similar to the lowered self-contingency in the dyads with high maternal anxiety symptoms, at L1.

*Mothers.* Similar to infants, *self-contingency* findings of mothers endorsing comorbid symptoms were the same as those of mothers endorsing either high depressive or anxiety symptoms, although at different lags.