Kim, S; Fonagy, P; Allen, J; Strathearn, L; (2014) Mothers' unresolved trauma blunts amygdala response to infant distress. **Social Neuroscience**, 9 (4) 10.1080/17470919.2014.896287.

**Table 1.** Sociodemographic and behavioral characteristics of mothers by trauma status (N = 42)

| Characteristic  | No trauma<br>( <i>n</i> = 25) | Unresolved trauma (n = 17)   | р          |
|---|-------------------------------|------------------------------|------------|
| Maternal age, mean ± <i>SD</i> Maternal race, <i>n</i> (%)  | $27.3 \pm 4.3$                | 29.5 ± 4.9                   | .13<br>.11 |
| White   | 13 (52.0)                     | 13 (76.5)                    |            |
| Non-White<br>Marital status, <i>n</i> (%)   | 12 (48.0)                     | 4 (23.5)                     | .86        |
| Married Not married   | 17 (68.0)<br>8 (32.0)         | 12 (70.6)<br>5 (29.4)        |            |
| Maternal education, <i>n</i> (%)  | 0 (32.0)                      | 3 (29.4)                     | .94        |
| College incomplete College/university degree  | 6 (24.0)<br>10 (40.0)         | 4 (23.5)<br>6 (35.3)         |            |
| Postgraduate degree<br>Socioeconomic status, mean ± <i>SD</i> <sup>a</sup>  | 9 (36.0)<br>49.9 ± 10.4       | 7 (41.2)<br>51.9 ± 9.8       | .58        |
| Maternal depression (RDI), many LSD <sup>c</sup>  | 109 ± 9.1<br>4.9 ± 4.4        | 109.1 ± 7.2<br>3.5 ± 2.3     | .86<br>.40 |
| Maternal depression (BDI), mean ± SD <sup>c</sup> Maternal personality pathology (PDQ)  Total score, mean ± SD <sup>d</sup> Maternal parenting stress (PSI) | 4.9 ± 4.4<br>23.4 ± 12.0      | $3.3 \pm 2.3$ $19.4 \pm 9.8$ | .27        |
| Child Domain Total Score, mean ± SD   | 93.7 ± 15.0                   | 91.4 ± 13.6                  | .65        |
| Parent Domain Total Score, mean ± SD  | 116.0 ± 24.2                  | 112.4 ± 19.9                 | .65        |
| Total Stress Score, mean ± SD <sup>e</sup> Maternal temperament (ATQ)   | 209.6 ± 31.8                  | 196.0 ± 38.4                 | .25        |
| Effortful Control, subscale score, mean ± <i>SD</i>   | $4.5 \pm 0.6$                 | $4.6 \pm 0.9$                | .80        |
| Negative Affect, subscale score, mean ± <i>SD</i>   | 4.1 ± 0.7                     | $3.8 \pm 0.8$                | .28        |
| Extraversion/Surgency, subscale score, mean ± <i>SD</i>   | $4.8 \pm 0.8$                 | $4.9 \pm 0.7$                | .72        |
| Orienting Sensitivity, subscale score, mean ± <i>SD</i>   | 5.1 ± 0.7                     | $4.9 \pm 0.7$                | .35        |

*Note*. The *p* values represent those from the *t* and  $\chi^2$  tests for continuous and dichotomous variables, respectively. BDI = Beck Depression Inventory-II; PDQ =

Personality Disorder Questionnaire-4+; PSI = Parenting Stress Index; ATQ = Adult Temperament Questionnaire – Short Form.

<sup>a</sup> Socioeconomic status was estimated using Hollingshead (1975)'s Four-Factor Index of Social Status, and represents joint information with partner, when applicable. <sup>b</sup> Maternal Full Scale IQ was estimated from the Wechsler Test of Adult Reading (WTAR). <sup>c</sup> BDI-II score of ≤ 9 indicate minimal depression. <sup>d</sup> PDQ-4+ total score of ≥ 50 is highly suggestive of DSM-IV personality disorder. <sup>e</sup> PSI Total Stress Score of < 260 is considered normal range.

**Table 2.** Early and late phase amygdala BOLD response for trauma status by stimulus type.

|                                |                       | (a)              | No trauma (n =                 | = 25)            |                |                                |
|--------------------------------|-----------------------|------------------|--------------------------------|------------------|----------------|--------------------------------|
|                                | Early phase           |                  |                                | Late phase       |                |                                |
|                                | Own                   | Unknow<br>n      | Difference<br>(z) <sup>b</sup> | Own              | Unknow<br>n    | Difference<br>(z) <sup>b</sup> |
| Нарру                          | 1.91 ±<br>0.18        | 0.99 ±<br>0.15   | 5.23***                        | 0.66 ± 0.23      | 0.51 ±<br>0.19 | 0.96                           |
| Sad                            | 1.61 ±<br>0.19        | 1.22 ±<br>0.17   | 2.16 <sup>*</sup>              | 1.04 ±<br>0.18   | 0.65 ±<br>0.21 | 2.42*                          |
| Difference<br>(z) <sup>a</sup> | -2.58**               | 2.01*            |                                | 3.00**           | 1.14           |                                |
|                                |                       | (b) Unre         | esolved trauma                 | (n = 17)         |                |                                |
|                                |                       | Early Late phase |                                |                  |                | e                              |
|                                |                       |                  |                                |                  |                |                                |
|                                | Own                   | Unknow<br>n      | Difference<br>(z) <sup>b</sup> | Own              | Unknow<br>n    | Difference (z) <sup>b</sup>    |
| Нарру                          | Own<br>1.48 ±<br>0.20 |                  |                                | Own  1.00 ± 0.19 |                | Difference                     |
| Happy<br>Sad                   | 1.48 ±                | n<br>0.87 ±      | (z) <sup>b</sup>               | 1.00 ±           | n<br>0.73 ±    | Difference<br>(z) <sup>b</sup> |

Note. The values shown are *z*-normalized BOLD signal change values ( $M \pm SE$ ) extracted from the anatomically defined bilateral amygdala mask. There was no effect of laterality; data from the left and right amygdala are hence presented in conjunction.

a *z*-statistic comparing sad and happy infant faces, at each level of infant face identity (own vs. unknown) x trauma status (no trauma vs. unresolved trauma), within the final mixed-effects linear regression model. b *z*-statistic comparing own and unknown infant

faces, at each level of infant face affect (happy vs. sad) x trauma status (no trauma vs. unresolved trauma), within the final mixed-effects linear regression model.

$$^{\dagger}$$
 < .10,  $^{*}p$  < .05,  $^{**}p$  < .01,  $^{***}p$  < .001.