

## Supplemental Material

### Section 1: Power Analyses

We conducted several power analyses for our hypothesized effects. For all analyses, we utilized a simulation method that is illustrated in Bolger, Stadler, & Laurenceau, 2011; Lane & Hennes, 2017; and Thorson et al., 2018. For each model, we first provided estimates for each parameter in the model and used these estimates to simulate data for 1000 hypothetical studies with between 55 and 70 dyads (a range we expected based on our average levels of missing data for idiographic estimates of linkage, see Thorson et al., under review). Once the data were simulated, we analyzed each of the 1000 samples individually and output the number of times the effect of interest was significant (at the  $p < .05$  threshold). All models were computed in SAS, and the syntax is available through OSF.

We begin with the power analyses for the models in which we examined the power to detect the predicted effects of role and empathy (and their interaction) on reactivity during the TSST. We utilized a conservative approach of examining these effects on reactivity, on average, across the task (i.e. a single measure of reactivity for each participant). The power to detect the predicted two-way role x partner empathy interaction on reactivity ranged between 95% and 99% (for 55 to 75 dyads, respectively, specifying a range of  $B = .27$  to  $.30$ ,  $SE = .12$  to  $.15$ ). For actors, the power to detect a main effect of empathy on reactivity ranged from 80% to 93% (for 55-70 dyads, with a range of a standardized effect of  $B = .30$  to  $.40$ ,  $SE = .21$ ).

Next, we examined the power to detect the predicted three-way actor linkage x actor empathy x role interaction on actor accuracy. Results indicate between 65% and

77% power to detect the interaction (for 55 and 70 dyads, respectively, with a standardized effect of  $B = -.23$ , SE range of .09 to .10, which closely match the estimates we found of  $B = -.24$  and  $SE = .099$ ). We then examined the power to detect the predicted two-way actor empathy x actor linkage effect for listeners. Results indicate between 74% and 82% power to detect the interaction (for 55-70 dyads, respectively, specifying a  $B = .41$ ,  $SE = .13$ , which closely match the estimates of  $B = .41$ ,  $SE = .16$ ).

In summary, across all analyses, we had between 65% to 99% statistical power to detect our effects of interest, including interactions and main effects of interest.

## **Section 2: Monetary Incentive for Emotional Disclosure**

During consent experimenter's genuine emotional disclosure was monetarily incentivized. Listeners were unaware of the incentive. Experimenters explained to participants assigned to the role of experimenter, "*we hope that your partner is able to feel some of the emotions you felt. For this reason, we'd like you to be as open and honest as possible and share your true feelings and emotions when you share your personal stories. In order to encourage you to be open and share your genuine emotional experiences with your partner, we're going to offer you extra money. Following your interaction, expert behavioral coders will rate your videos for how open you were with your feelings and how genuinely you expressed your emotions. The higher the experts rate you in these categories the more money you'll earn. Your partner will also earn extra money if you are genuine with your emotional experience. You and your partner can earn up to \$16 extra dollars, or \$8 each if your emotions are genuinely expressed. So we want you to do your best to be open with your feelings and genuinely express your emotions. Does that make sense? Do you have any questions?*" Regardless of the intensity of emotions and

experiences shared, all participants received were given an \$8 bonus at the end of the study.

### **Section 3: Conversational prompts**

During the emotion disclosure interaction, listeners were given a stack of cue cards with conversational prompts. The first three cards were based on the negative emotion eliciting experiences the experiencers had during the emotion induction. These cards were given in the same order to all participants. Below are the questions on the first three cue cards for listeners.

1. Describe your experience drinking while watching the first film.
2. Describe your experience watching the second film
3. Describe your experience with your hand in the ice while watching the third film.

To match the cue cards given to listeners, experiencers were given three cards, each with an image from that film (to help with recall).

1.



2.



3.



The stack of cue cards given to listeners also included prompts that reflected questions from the online assessment regarding emotionally negative personal experiences. These cards were stacked in the order of intensity as rated by the experiencer in the online questionnaire (highest intensity to lowest intensity).

1. Has anyone ever betrayed you? How?
2. What is the saddest thing that has ever happened to you?
3. What has happened in your life that might be considered too serious or sensitive to be joked about?
4. If you had to name the most terrifying moment of your life so far, what would it be?
5. What were some serious problems you had with a past romantic relationship?
6. What has been the biggest disappointment or failure in your life?
7. Who is an individual whose presence you do miss or would miss in your life?  
How is your life or how would your life be without them?

8. What is the biggest sacrifice that you have made in your life? Did anyone acknowledge your sacrifice?
9. What is something you don't like about your family?
10. Discuss an argument you were in. Who was it with, and what was it about?

#### **Section 4: Analyses using IRI empathic concern instead of BEES emotional empathy**

Dispositional emotional empathy refers the tendency to share others' emotions (i.e., feeling what someone else feels). The Balanced Emotional Empathy Scale (BEES) and the IRI empathic concern subscale are both widely used scales that capture similar constructs (in the current sample,  $r = .63, p < .001$ ). The 30-item BEES has items related to the vicarious experience of other's emotions, and unlike the IRI, the BEES includes items related to the vicarious experience of positive emotions like happiness, and it also specifically touches on responses to other's negative feelings like sadness and distress that are relevant in the current study. In contrast, a close examination of the 7-items in the empathic concern subscale of the IRI reveals items that focus on concern, tenderness, and soft-hearted feelings towards others. The empathic concern scale, while often referred to as "emotional empathy" may simply capture a construct akin to sympathy. For these reasons, we chose to include the BEES in this study as our primary measure because it provides a more thorough interrogation of emotional empathy that is most relevant to the current theoretical construct of interest. However, we examined whether the empathic concern subscale of the IRI ( $\alpha = .71$ ), would result in similar effects regarding our primary hypotheses related to experimenter negative affect and SNS reactivity; and

listener's negative affect, linkage, and the relationship between linkage and accuracy. Below, we describe these results, which are almost entirely consistent with the BEES

**Experiencers' Self-reported Affect.** Similar to findings using BEES, experiencers' paired with listeners higher in IRI empathic concern did not report less negative affect during the TSST,  $r(62) = .05, p = .692$ , however, we found a non-significant trend for experiencers reporting less negative affect during the emotion disclosure interaction,  $r(63) = .24, p = .062$ .

**Sympathetic Reactivity.** A significant partner IRI empathic concern x task interaction was found,  $F(4, 466) = 13.85, p < .001, R^2_{\beta} = 0.106$ , and a significant Role x partner IRI empathic concern x task interaction was found,  $F(4, 466) = 28.56, p < .001, R^2_{\beta} = 0.199$ .

We next examine the two-way role x partner empathy interaction separately for each task. We found that the two-way interaction was not significant for the getting acquainted task ( $b = 0.18, SE = 0.90, \text{Upper CI} = 1.98, \text{Lower CI} = -1.61$ ),  $t(115) = .20, p = .830, R^2_{\beta} = 0.0003$ , the emotion induction task, ( $b = 0.84, SE = 0.90, \text{Upper CI} = 2.62, \text{Lower CI} = -0.95$ ),  $t(134) = 0.92, p = .357, R^2_{\beta} = 0.006$ , the emotion disclosure interaction task ( $b = 1.23, SE = 0.99, \text{Upper CI} = 3.18, \text{Lower CI} = -0.72$ ),  $t(143) = 1.25, p = .215, R^2_{\beta} = 0.0108$ , and the play back task ( $b = 0.38, SE = 1.10, \text{Upper CI} = 2.56, \text{Lower CI} = -1.79$ ),  $t(143) = .35, p = .728, R^2_{\beta} = 0.0009$ .

However, for the TSST, the two-way role x partner empathy interaction was significant ( $b = 4.23, SE = .96, \text{Upper CI} = 6.14, \text{Lower CI} = 2.33$ ),  $t(168) = 4.40, p < .001, R^2_{\beta} = 0.103$ . Consistent with the findings for partner BEES, for experiencers, the main effect of interaction partner empathy on experiencers' reactivity was significant ( $b$

= 7.37,  $SE = 1.31$ , Upper CI = 9.96, Lower CI = 4.78),  $t(168) = 5.62$ ,  $p < .001$ ,  $R^2_{\beta} = 0.158$ ; the more empathic their interaction partners were, the *less* reactive experiencers were during the TSST. For listeners, the main effect of interaction partner empathy was not significant ( $b = -1.10$ ,  $SE = 1.41$ , Upper CI = 1.68, Lower CI = -3.88),  $t(169) = -0.78$ ,  $p = .437$ ,  $R^2_{\beta} = 0.0036$ .

### **Listeners' Self-reported Affect.**

Listeners higher in IRI empathic concern did not report significantly greater negative affect during the TSST,  $r(65) = -.09$ ,  $p = .469$ , nor did they report significantly greater negative affect during the emotion disclosure interaction,  $r(65) = -.03$ ,  $p = .799$ .

### **Linkage and Accuracy.**

The hypothesized three way actor linkage x actor empathy x Role interaction was significant ( $b = -0.68$ ,  $SE = 0.32$ , Upper CI = -0.04, Lower CI = -1.32),  $t(87.13) = -2.13$ ,  $p = .036$ ,  $R^2_{\beta} = 0.050$ . For experiencers, the actor linkage x actor empathy interaction was not significant ( $b = -0.19$ ,  $SE = 0.31$ , Upper CI = 0.42, Lower CI = -0.80),  $t(84.75) = -0.63$ ,  $p = .530$ ,  $R^2_{\beta} = 0.005$ . There was also no main effect of actor linkage on accuracy for these participants ( $b = -0.06$ ,  $SE = 0.19$ , Upper CI = 0.31, Lower CI = -0.44),  $t(83.44) = -0.33$ ,  $p = .742$ ,  $R^2_{\beta} = 0.001$ . Thus, consistent with the effects for the BEES, for experiencers, there was no overall association between linkage during the “emotional disclosure interaction” and accuracy in reading their partners, nor was this effect moderated by targets’ empathy.

For listeners, however, there was a significant actor linkage x actor empathy interaction ( $b = 1.17$ ,  $SE = 0.56$ , Upper CI = 2.28, Lower CI = 0.07),  $t(83.13) = 2.115$ ,  $p = .037$ ,  $R^2_{\beta} = 0.053$ . Consistent with the effects for BEES, for listeners, the higher they are

on IRI empathic concern, they more positive the association between linkage and accuracy. For listeners who were relatively high on IRI empathic concern (i.e., one standard deviation above the mean), the main effect of linkage on accuracy was positive, but not significant ( $b = 0.30$ ,  $SE = 0.35$ , Upper CI = 0.99, Lower CI = -0.40),  $t(82.37) = 0.85$ ,  $p = .398$ ,  $R^2_{\beta} = 0.009$ . For listeners who were relatively low on IRI empathic concern (i.e., one standard deviation below the mean), the main effect of linkage accuracy was negative and significant ( $b = -1.00$ ,  $SE = 0.49$ , Upper CI = -0.02, Lower CI = -1.97),  $t(82.79) = -2.03$ ,  $p = .046$ ,  $R^2_{\beta} = 0.047$ .

Taken together, results for IRI emotional empathy are consistent with effects for the BEES emotional empathy, with the exception that listener's with higher emotional empathy were not as likely to experience greater negative affect during the emotion disclosure interaction.

### Section 5: Partner Likeability Questionnaire

Following the “getting acquainted” interaction, participants completed the following questionnaire:

Instructions: Please use the scale below to answer the following questions about your partner. Write the appropriate number in the blank provided for each question.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. I could see myself being friends with this person. \_\_\_\_\_
2. This person was not likeable. \_\_\_\_\_
3. I thought this person had a good personality. \_\_\_\_\_
4. This person seemed nice. \_\_\_\_\_
5. I think my partner enjoyed our conversation. \_\_\_\_\_
6. This person seemed to care about what I was saying. \_\_\_\_\_
7. I think this person liked me. \_\_\_\_\_
8. This person seemed bored with our conversation. \_\_\_\_\_
9. This person made a good first impression. \_\_\_\_\_



10. This person thought I liked them. \_\_\_\_\_
11. I got along well with this person. \_\_\_\_\_
12. I enjoyed the conversation. \_\_\_\_\_
13. I would like to talk more with this person. \_\_\_\_\_
14. I have a lot in common with this person. \_\_\_\_\_
15. I would like to have another interaction like this with this person. \_\_\_\_\_
16. My partner was interested in interacting with me. \_\_\_\_\_
17. I had a smooth interaction with my partner. \_\_\_\_\_

## **Section 6: Comparing likeability and cognitive empathy to emotional empathy**

### ***Likeability***

**Experiencers' self-reported affect.** As reported in the main text, listeners' likeability was only associated with their self-reported affect during the interaction,  $r(64) = .31, p = .011$ , but not during the TSST,  $r(63) = .04, p = .753$ .

**Sympathetic nervous system reactivity.** Unlike emotional empathy, we did not find the hypothesized three-way task x role x partner likeability interaction,  $F(4, 469) = 1.36, p = .247, R^2_{\beta} = 0.011$ . The two-way role x partner likeability interaction was not significant for any task, and we found no significant main effects of partner likeability on sympathetic reactivity for any of the tasks.

**Listeners' self-reported affect.** Unlike emotional empathy, listeners' likeability was neither associated with their self-reported affect during the TSST,  $r(67) = -.19, p = .123$ , nor their self-reported affect during the emotion disclosure interaction,  $r(67) = -.04, p = .773$ .

**Linkage and accuracy.** We did not find a three way actor linkage x actor likeability x role interaction ( $b = 0.11, SE = 0.40, \text{Upper CI} = 0.90, \text{Lower CI} = -0.68$ ),  $t(93.58) = .284, p = .777; R^2_{\beta} = 0.014$ . However, in this model, there was a main effect of likeability that did not vary as a function of role, such that more likeable individuals were

rated more accurately ( $b = 0.15$ ,  $SE = 0.06$ , Upper CI = 0.27, Lower CI = 0.03),  $t(93.55) = 2.40$ ,  $p = .019$ ;  $R^2_{\beta} = 0.058$ .

### ***Cognitive Empathy***

**Experiencers' self-reported affect.** Unlike listener's emotional empathy, listener's cognitive empathy was not significantly associated with experiencers' reported affect during the emotion disclosure interaction,  $r(64) = -.06$ ,  $p = .649$ , or the TSST,  $r(63) = .09$ ,  $p = .458$ .

**Sympathetic nervous system reactivity.** Although we found a three-way task x role x partner cognitive empathy interaction,  $F(4, 503) = 2.76$ ,  $p = .027$ ,  $R^2_{\beta} = 0.021$ . The two-way role x partner cognitive empathy interaction was not significant for any task, and we found no significant main effects of partner cognitive empathy on sympathetic reactivity for any of the tasks.

**Listeners' self-reported affect.** Unlike emotional empathy, listener's cognitive empathy was neither associated with their self-reported affect during the TSST,  $r(67) = -.004$ ,  $p = .977$ , nor their self-reported affect during the emotion disclosure interaction,  $r(67) = .015$ ,  $p = .905$ .

**Linkage and accuracy.** We did not find a three way actor linkage x actor cognitive empathy x role interaction ( $b = -0.44$ ,  $SE = 0.29$ , Upper CI = 0.13, Lower CI = -1.01),  $t(90.43) = -1.53$ ,  $p = .129$ ;  $R^2_{\beta} = 0.025$ .

## **Section 7: Additional results and exploratory analyses**

***Additional Sympathetic Reactivity Results—effects of participant's own empathy.***

For the analysis examining whether partner's empathy (a partner effect) is associated with lower sympathetic reactivity during certain tasks (and particularly for experiencers), a significant three-way task x role x actor empathy interaction was also found,  $F(4, 482) = 13.83, p < .001, R^2_{\beta} = 0.103$ . However, in examining the two-way role x actor empathy interaction separately by task, the two-way interaction was not significant for any of the tasks: the getting acquainted task ( $b = -0.03, SE = 0.02, \text{Upper CI} = 0.02, \text{Lower CI} = -0.07, t(131) = -1.43, p = .160, R^2_{\beta} = 0.015$ ); the emotion induction task ( $b = -0.00, SE = .02, \text{Upper CI} = 0.04, \text{Lower CI} = -0.04, t(151) = -0.02, p = .98, R^2_{\beta} = 0.000$ ); the TSST ( $b = 0.03, SE = 0.02, \text{Upper CI} = 0.07, \text{Lower CI} = -0.01, t(192) = 1.43, p = .15, R^2_{\beta} = 0.010$ ); the emotion disclosure interaction ( $b = -0.01, SE = 0.02, \text{Upper CI} = 0.03, \text{Lower CI} = -0.06, t(163) = -0.61, p = .54, R^2_{\beta} = 0.002$ ); or the play back ( $b = -0.03, SE = 0.02, \text{Upper CI} = 0.02, \text{Lower CI} = -0.07, t(158) = -1.08, p = .28, R^2_{\beta} = 0.007$ ). Thus, the significant three-way interaction is driven by different patterns of effects across the three tasks, and the effect of participant's own empathy on their reactivity does not significantly vary as a function of role in any of the tasks.

#### ***Additional linkage and accuracy results – effects of partner empathy***

For the analysis examining whether participant's own empathy (an actor effect) strengthens the relationship between accuracy and linkage (and particularly for listeners), we also found a main effect of partner empathy: the more empathic people's partners were, the more accurate they were in reading those partners emotions ( $b = 0.002, SE = 0.001, \text{Upper CI} = 0.01, \text{Lower CI} = 0.0004, t(83.66) = 2.33, p = .022, R^2_{\beta} = 0.061$ ). This effect holds while including the actor effects in the model that are reported in the paper (this effect was not moderated by role or linkage,  $ps > .11$ ).

*Additional sympathetic reactivity analyses – trimming out actor empathy from the model.*

A main effect of role was found,  $F(1, 88.1) = 9.01, p = .0035, R^2_{\beta} = 0.092$ , and a main effect of task,  $F(4, 256) = 483.34, p < .001, R^2_{\beta} = 0.88$ . A two-way task x partner empathy interaction was found,  $F(4, 532) = 10.52, p < .001, R^2_{\beta} = 0.073$ , and a two-way role x partner empathy interaction,  $F(1, 130) = 4.55, p = .035, R^2_{\beta} = 0.137$ . These effects were qualified by the hypothesized three-way task x role x partner empathy interaction,  $F(4, 509) = 16.87, p < .001, R^2_{\beta} = 0.12$ .

We examine the two-way role x partner empathy interaction separately for each task. We found that the two-way interaction was not significant for the getting acquainted task, ( $b = 0.02, SE = 0.02$ ; Upper CI = 0.07, Lower CI = -0.02),  $t(139) = .98, p = .33, R^2_{\beta} = 0.007$ ; the emotion induction task, ( $b = 0.03, SE = 0.02$ , Upper CI = 0.07, Lower CI = -0.004),  $t(148) = 1.75, p = .081, R^2_{\beta} = 0.020$ , the play back task ( $b = 0.02, SE = 0.02$ ; Upper CI = 0.07, Lower CI = -0.02),  $t(131) = 1.00, p = .320, R^2_{\beta} = 0.008$ , or the emotion disclosure interaction, ( $b = 0.03, SE = 0.02$ , Upper CI = 0.07, Lower CI = -0.010),  $t(151) = 1.50, p = .14, R^2_{\beta} = 0.015$ . For the TSST, the two-way role x partner empathy interaction was significant, ( $b = 0.09, SE = 0.02$ , Upper CI = 0.13, Lower CI = 0.05),  $t(172) = 4.23, p < .001, R^2_{\beta} = 0.09$ . For experiencers, the main effect of partner empathy on experiencers' reactivity was significant, ( $b = 0.16, SE = 0.03$ , Upper CI = 0.22, Lower CI = 0.10),  $t(173) = 5.27, p < .001, R^2_{\beta} = 0.14$ ; the more empathic their interaction partners were, the *less* reactive experiencers were during the TSST (i.e., they had less change in PEP). For listeners, the main effect of interaction partner empathy was not significant ( $b = -0.01, SE = 0.03$ , Upper CI = 0.04, Lower CI = -0.07),  $t(179) = -.53, p = .60, R^2_{\beta} = 0.002$ . Thus,

the results of the analyses excluding actor empathy parallel those that include it, which are reported in the main text.

***Additional linkage and accuracy analyses—trimming out partner empathy from the model.***

The hypothesized three way actor linkage x actor empathy x Role interaction was found ( $b = -0.01$ ,  $SE = 0.01$ , Upper CI = -0.003, Lower CI = -0.03),  $t(87.62) = -2.51$ ,  $p = .014$ ;  $R^2_{\beta} = 0.067$ . For Experiencers, the actor linkage x actor empathy interaction was not significant ( $b = -0.01$ ,  $SE = 0.01$ , Upper CI = 0.01, Lower CI = -0.02),  $t(84.82) = -0.98$ ,  $p = .330$ ;  $R^2_{\beta} = 0.011$ . There was also no main effect of actor linkage on accuracy for these participants ( $b = 0.02$ ,  $SE = 0.18$ , Upper CI = 0.39, Lower CI = -0.34),  $t(84.76) = 0.12$ ,  $p = .908$ ;  $R^2_{\beta} = 0.0002$ . Thus, for Experiencers, there was no overall association between linkage during the emotional disclosure interaction and accuracy in reading their partners, nor was this effect moderated by Experiencers' empathy.

For listeners, however, there was a significant actor linkage x actor empathy interaction ( $b = 0.02$ ,  $SE = 0.01$ , Upper CI = 0.04, Lower CI = 0.004),  $t(83.53) = 2.38$ ,  $p = .020$ ;  $R^2_{\beta} = 0.064$ . For listeners, the higher they are on empathy, the more positive the association between linkage and accuracy. For listeners who were relatively high on empathy (1 SD above the mean), the main effect of linkage on accuracy was positive, but not significant, ( $b = 0.35$ ,  $SE = 0.31$ , Upper CI = 0.97, Lower CI = -0.27, Upper CI = 0.97, Lower CI = -0.27),  $t(83.99) = 1.11$ ,  $p = .269$ ;  $R^2_{\beta} = 0.014$ . For listeners who were relatively low on empathy, the main effect of linkage on accuracy was negative and significantly different from zero, ( $b = -0.84$ ,  $SE = 0.41$ , Upper CI = -0.03, Lower CI = -

1.65),  $t(84.22) = -2.06$ ,  $p = .042$ ;  $R^2_{\beta} = 0.048$ . Thus, model results are consistent when partner empathy is not included in the model.