Is Your Child Even Listening to You?

Relationship between Socialization of Coping and Coping Behavior, Moderated by Physiological Stress Reactivity

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BACKGROUND

- Parents are important in shaping children's responses to peer stress (Abaied & Rudolph, 2010)
- Whether children use parent-recommended strategies may depend on their stress reactivity
- **Differential susceptibility theory** suggests that some individuals are both more responsive to the negative effects of adversity and the beneficial effects of an enriching environment (Belsky & Pluess, 2009; see also Boyce & Ellis, 2005)
  - **Physiological** indicators may reflect this heightened sensitivity (Belsky & Pluess, 2009), including:
    - Skin conductance reactivity (SCL-R; a measure of sweat gland activity), an index of the sympathetic "fight or flight" response
    - Respiratory sinus arrythmia (RSA; a measure of respiratory change), an index of parasympathetic "rest and digest" response

I expected that parental suggestions would more strongly influence children that exhibited high SCL-R and RSA augmentation

METHODS

99 children ages 8 – 12 years (M = 10.76, 51% male) and one of their parents (84% mothers)

We assessed proportions of parent suggestions of **…**

- **primary engagement coping** (change situation)
  Example: *deal with the problem head on rather than ignoring it*
- **secondary engagement coping** (change self)
  Example: *look for something good in what is happening*
- **disengagement coping** (distance self from problem)
  Example: *try to stop him or herself from thinking about the problem*

While recounting a recent stressful peer situation (example: *being left out*), we measured children's **skin conductance** and **respiratory sinus arrhythmia**

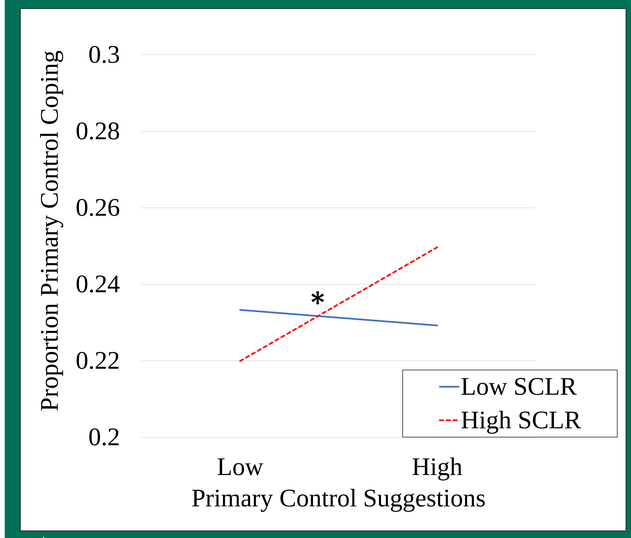
Changes in arousal from baseline to stressor indicate the child's physiological reactivity to peer stress

RESULTS

Correlations indicated that parent coping suggestions of…

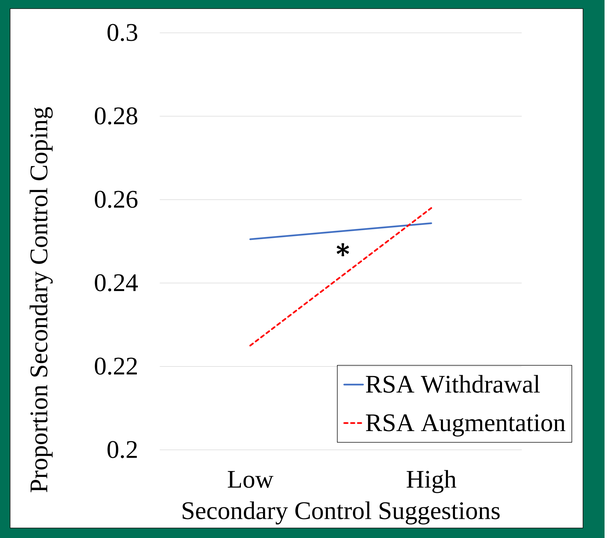
- primary engagement were positively related to children's primary engagement coping (r = 0.444, p < .001)
- secondary engagement were positively related to children's secondary engagement coping (r = 0.518, p < .001)
- disengagement were positively related to children's disengagement coping (r = 0.408, p < .001)

Parents' suggestions are related to how children deal with **peer conflict**; however, effects depend on children's **stress response**.



* Indicates significant slope, p = .001

Figure 1: Primary Control Suggestions Predict Coping, Moderated by Skin Conductance Reactivity



* Indicates significant slope, p = .02

Figure 2: Secondary Control Suggestions Predict Coping, Moderated by Respiratory Sinus Arrhythmia Reactivity

Table 1: Regression Analyses of Socialization of Coping Predicting Child Coping, Moderated by Physiological Reactivity

Predictors	Physiology Predictor	
	Skin Conductance Level Reactivity (SCL-R)	Respiratory Sinus Arrhythmia Reactivity (RSA-R)
Model 1: Primary Control	b (SE)	b (SE)
Gender	-.007 (.007)	-.005 (.007)
Primary Control Sugg.	.013† (.007)	.010 (.008)
Phys. Reactivity	.001 (.002)	-.090 (.109)
Primary Control Sugg. X Phys. Reactivity	**.013* (.005)**	.005 (.282)
Model 2: Secondary Control		
Gender	-.010 (.010)	-.013 (.011)
Secondary Control Sugg.	.014† (.007)	.012† (.007)
Phys. Reactivity	.001 (.004)	-.150 (.146)
Secondary Control Sugg. X Phys. Reactivity	.009 (.006)	**.242* (.118)**
Model 3: Disengagement		
Gender	.003 (.005)	.003 (.005)
Disengagement Sugg.	**.007* (.003)**	**.007* (.003)**
Phys. Reactivity	.002 (.001)	-.028 (.058)
Disengagement Sugg. X Phys. Reactivity	.003 (.002)	.050 (.051)

† p < .10, * p < .05

RESULTS CONT.

Primary control suggestions were positively related to children's use of this coping strategy, but only among those high in SCL-R (Figure 1)

Secondary control suggestions were positively related to children's use of this coping strategy, but only among children exhibiting RSA augmentation (Figure 2)

Stress reactivity did **not** moderate use of disengagement strategies

DISCUSSION

Parental coping suggestions may be an important resource in children's coping.

Physiological stress reactivity may provide important insights regarding which children are more likely than others to implement parenting coping suggestions.

In line with differential susceptibility theory…

- SCL-R may serve as an index of greater plasticity or susceptibility to environmental factors

Conversely, children that exhibited RSA augmentation to peer stress exhibited particularly low levels of secondary control coping when their parents rarely encouraged these coping responses

- According to **polyvagal theory**, RSA indexes emotional and behavioral self-regulation when faced with a stressful stimuli (Abaied, Wagner, & Sanders, 2014; Porges, 2001, 2003)
- Children who exhibit RSA augmentation may have difficulty engaging in the self-regulatory skills necessary for secondary control coping.
  - However, when parents provide support through socialization of coping, these children may be successful in implementing secondary control strategies

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Method

Participants

Participants were recruited from a small northeastern city to take part in the Peer Relationship Interview Project conducted by primary investigator Dr. Murray-Close. Participants were recruited from a sample of families participating in a related study (*N* = 58) as well as through community advertisements (*N* = 41). Participants included 99 children ages 8 to 12 years (M_{age} = 10.76, SD = 0.92; 51% male; 94% Caucasian/non-Hispanic) and their caregiver (84% mothers).

Procedure

All procedures were completed in the Social Development Laboratory. Prior to study activities, parent and child participants completed consent and child assent forms. Following consent/assent, child participants were escorted to an individual interview room with their parents, and the research assistant assisted the child with attaching physiological sensors on their hands, ribcage, and sternum. Participants then completed a series of stressor tasks, including the semi-structured interview used in the present study. Prior to the stress tasks, parents were escorted back to a separate room by a second research assistant to complete self-report measures. Following study procedures, participants were thanked and compensated for their time.

Method: Measures

Parent Coping Suggestions. Parents completed a 24-item self-report measure of the coping strategies that they suggested to their children when their children encountered peer stress (Socialization of Coping; Abaied, 2010). The measure includes the following three subscales: primary engagement coping suggestions (7 items; e.g., "When my child has problems with peers, I encourage my child to deal with the problem head on rather than ignoring it"; α = .72), secondary engagement coping suggestions (8 items; e.g., "When my child has problems with peers, I encourage my child to look for something in good in what is happening"; α = .84), and disengagement coping suggestions (9 items, e.g., "When my child has problems with peers, I encourage my child to try to stop him or herself from thinking about the problem"; α = .91; Abaied & Rudolph, 2010). Parents were asked to rate each item from 1, "Not at all", to 5, "Very much." Items were averaged across subscales.

Child Engagement of Coping. Using the Response to Stress Questionnaire – Peer Stress (57-items; Compas et al., 2001), parents provided reports of their child's enactment of coping responses to peer stress, including primary engagement coping (9 items, e.g. "He/she does something to try to fix the stressful parts of problems with other kids"; α = .82), secondary engagement coping (12 items, e.g. "He/she tells himself/herself that it doesn't matter, that it isn't a big deal"; α = .84), and disengagement coping (9 items, e.g. "When he/she is around other people he/she acts like the problems with other kids never happened"; α = .69), as well as involuntary behaviors (Compas et al., 2001). To account for potential response bias and rates of endorsement using the Response to Stress Questionnaire, we used the proportion of each coping style for analyses (see Bettis et al., 2016). The proportion of coping that was primary engagement, secondary engagement, and disengagement were calculated by dividing the subscale scores by the total mean score across the coping measure (i.e., the mean for all subscales including involuntary coping; Bettis et al., 2016).

Physiological Reactivity. Children completed a series of stress tasks to assess physiological stress reactivity. For skin conductance reactivity (SCL-R), two physiological sensors were attached to the child's fingers. For respiratory sinus arrhythmia (RSA-R), heart rate was assessed using an electrocardiogram (EKG) by placing three gel-coated electrodes on the child's ribcage and sternum. Respiration was assessed by placing pneumatic bellows around the child's chest on top of their clothing. Bellows were attached to a pressure transducer to detect changes in respiration. The James Long IBI Analysis system (Caroga Lake, NY) was used to calculate RSA based on EKG and respiration.

During the physiology session, participants completed three stress tasks, counterbalanced in order. This study utilized one of these three stress tasks called the Social Competence Interview (SCI; Ewart & Kolodner, 1991), a semi-structured interview lasting approximately 8-12 minutes that was adapted so that participants recounted a recent peer-based stressor (e.g., being left out; Murray-Close & Crick, 2007). The child was given a deck of five cards, each displaying common relational conflict situations. The child was instructed to choose the card that they experienced most recently and was most stressful. A research assistant asked the child to recount a specific time when they experienced that stressor and helped the child reconstruct the event by probing for specific details using guided imagery and reflective listening (e.g., what happened, where and when it happened, who was there, how the child was feeling when it happened). Participants had a 5-minute accommodation period to adjust to the feeling of the equipment and lab environment. In addition, participants had a 3-minute baseline prior to each stressor task as well as a 3-minute recovery period after each stressor task. Mean baseline arousal prior to the SCI was subtracted from mean arousal during the SCI to yield children's physiological reactivity; thus higher levels of SCL-R indicate increases in "fight or flight" responses to the SCI and higher levels of RSA-R indicate RSA augmentation (i.e., increases in "rest and digest") to the SCI.

Results: Preliminary Analyses

Preliminary Analyses. I ran descriptive analyses to identify mean age, as well as frequencies for gender. Correlational analyses were run between key study variables (Table 1). Correlational analyses indicated that parent primary engagement suggestions were not related to children's primary engagement coping (r = 0.129, p = 0.2). Parent secondary engagement suggestions were positively related to children's secondary engagement coping (r = 0.217, p = 0.03). Finally, parent disengagement suggestions were positively related to children's disengagement coping (r = 0.225, p = 0.025).

Results: Regression Analyses

For primary study analyses, I ran a separate regression for each type of coping and SCL-R and RSA-R, respectively, using the Process *macro* for SPSS (Hayes, 2017). Gender served as a covariate in all regression models because gender was significantly correlated with secondary and disengagement coping suggestions.

In the first set of analyses, primary engagement coping was regressed onto parental primary engagement coping suggestions, physiological reactivity (SCL-R or RSA-R), and the interaction between parental primary engagement coping and physiological reactivity. In the first model, SCL-R served as the index of physiological reactivity. The overall model was not significant (R^2 = .07, F[4, 91] = 1.81, p = .13). However, there was a marginally significant main effect of parent primary engagement suggestions on primary engagement coping behavior (b = .01, p = .09), such that as primary engagement suggestions increased, children's primary engagement coping behavior also increased. This marginally significant main effect was qualified by a significant interaction between primary engagement suggestions and SCL-R in the prediction of primary engagement coping (b = .01, p = .04). Simple slope analyses indicated that, in the context of high SCL-R, increases in parent primary engagement coping suggestions were associated with increases in primary engagement coping behavior (b = 03, p = .02; see Figure 1). However, this association was not significant in the context of low SCL-R (b = -.003, p = .80). Findings indicate that the positive association between parent primary engagement suggestions and child primary engagement coping was evident among children with high, but not low, SCL-R. In the second model, RSA-R served as the index of physiological reactivity. The overall model was not significant (R^2 = .04, F[4, 86] = .93, p = .45). Further, although primary engagement suggestions were positively associated with child primary engagement coping as a main effect, no other effects were significant.

Results: Regression Analyses

A parallel set of models were run for secondary engagement coping. The overall model with SCL-R serving as the index of physiological reactivity was marginally significant (R^2 = .09, F[4, 91] = 2.12, p = .08). There was a marginally significant main effect of parent secondary coping suggestions on secondary coping behavior (b = .01, p = .07). However, SCL-R did not predict secondary engagement coping (b = .001, p = .83), nor did it moderate the relationship between secondary engagement coping suggestions and secondary engagement coping behavior (b = .01, p = .16). In the next model with RSA-R serving as the index of physiological reactivity, the overall model was significant (R^2 = .35, F[4, 86] = 3.06, p = .02). There was a marginally significant interaction between secondary engagement suggestions and RSA-R in the prediction of secondary engagement coping (b = .25, p = .07). Simple slope analyses indicated that in the context of high RSA-R (i.e., RSA augmentation), increases in parent secondary engagement coping suggestions were associated with increases in secondary engagement coping behavior (b = .02, p = .03; see Figure 2). In contrast, at lower levels of RSA-R (i.e., RSA withdrawal), parent secondary coping suggestions were not significantly associated with children's secondary engagement coping behavior (b = .001, p = .90).

Results: Regression Analyses

Finally, a set of analyses were run in which disengagement coping behaviors were regressed on disengagement suggestions, physiological reactivity, and their interaction. In the model with SCL-R serving as the index of physiological reactivity, the overall model was marginally significant (R^2 = .09, F[4, 91] = 2.18, p = .08). The main effect of parent suggestions on coping behavior was significant (b = .01, p = .01). However, SCL-R was not associated with children's disengagement coping (b = .002, p = .37), and the interaction between disengagement coping suggestions and SCL-R in the prediction of disengagement coping was not significant (b = .003, p = .31). In the disengagement coping model in which RSA-R served as the index of physiological reactivity, the overall model was not significant (R^2 = .07, F[4, 86] = 1.59, p = .18). However, disengagement coping suggestions were positively associated with children's disengagement coping (b = .01, p = .02); no other effects in this model were significant.