Emotional compensation in parents

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ABSTRACT

Much of what is currently known about the emotional dimension of parental interactions concerns the role of congruent processes, in which partners experience similar emotions. Far less is known about non-congruent processes, in which partners regulate their emotions to balance out their partner's emotional responses. We define such "balancing out" processes as *emotional compensation*, and examine them in a series of four studies ($N =$ 895). In Study 1, we show that emotional compensation occurs in situations in which there is high certainty regarding the "correct" emotional response. In Studies 2 and 3, we show that the value placed on parental unity moderates the tendency to compensate. In Study 4, we show that compensation for high-intensity negative responses positively predicts relationship quality. This work brings to light processes that previously have not been examined in partners' emotional interactions.

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1. Introduction

Parents' emotional responses play a crucial role in how their children develop (Campos, Hiatt, Ramsay, Henderson, & Svejda, 1978; Cassidy, 1994; John & Gross, 2004). Knowing this, parents often are mindful of how they and their partners respond emotionally to their children, and try to "stay on the same page" whenever they can. However, in some situations, parents may have different emotional responses. These differences can lead to conflict, which in turn may have broader effects on the relationship between the partners (Cordova, Jacobson, Gottman, Rushe, & Cox, 1993; Reed, Randall, Post, & Butler, 2013). Understanding these emotional dynamics can provide important insights regarding both parental relationships and parenting.

As is the case with emotions expressed outside the context of the parental relationship, emotions expressed by one's partner often prompt congruent emotional responses, ones that closely approximate one's partner's responses (Anderson, Keltner, & John, 2003; Randall, Post, Reed, & Butler, 2013). As emotional responses are often expressions of one's judgment of the situation, emotional congruence may be especially evident in ambiguous situations, in which one uses one's partner's responses as an indicator of the appropriate response (Goldenberg, Saguy, & Halperin, 2014; Hatfield, Cacioppo, & Rapson, 1994; Schachter, 1959). Cases of congruence may also occur when it is important for partners to maintain a united front in front of their child, thus expressing emotions that are similar in intensity.

In other cases, however, one's partner's emotional responses may lead one to respond incongruently rather than congruently. In such cases, one partner's emotional response may prompt one to react in opposition to their partner. This may be especially true in cases in which one has a clear sense of the appropriate emotional response, yet one's partner's response reflects a radically different judgment of the same situation. In situations such as this, one may try to decrease (or increase) one's emotional response in order to balance out one's partner's emotional response if one feels that it is excessive (or insufficient).

While congruent processes have been a major focus of the literature on emotional influence, incongruent processes have been largely ignored. Understanding incongruent processes may shed light on emotional and regulatory mechanisms that occur in the context of parental interactions. In the following sections, we first map congruent and incongruent processes of emotional influence and then provide an empirical examination of the situations in which they occur.

1.1. Emotional congruence

Emotional congruence has been examined from a number of different perspectives (Peters & Kashima, 2015), including empathy (Davis, 1994), and more broadly, emotional contagion (Barsade, 2002; Hatfield et al., 1994; Hess & Fischer, 2014; Parkinson, 2011). In all of these contexts, the transfer of emotional processes from one person to the other has generally been seen as an unregulated process of contagion (but see Zaki, 2014).

In the context of work on interpersonal interactions between partners, researchers have focused mostly on the beneficial effects of emotional congruence. Most noteworthy is the theory of co-regulation, which suggests that emotional synchronization between partners contributes to a reduction in partners' emotional volatility, leading to long term regulation of the dyad (Butler & Randall, 2013; Ekman, Levenson, & Friesen, 1983; Ferrer & Helm, 2013; Sbarra & Hazan, 2008). In the present work, we extend these ideas by examining the role of emotional incongruence.

1.2. Emotional incongruence

To the extent that others' emotions naturally trigger congruent responding, incongruent responding may be seen as the result of emotion regulation. In particular, *emotional compensation* may be seen as an instance of emotional incongruence in which one seeks to regulate one's emotions in order to counterbalance what one perceives to be an inappropriate response by others. This may be done with the goal of changing the overall emotional response of one's group (Goldenberg et al., 2014). Emotional compensation may take the form of expressing a stronger emotion than one otherwise would in response to an emotion-eliciting situation after a low-intensity emotional response by one's partner (compared to a high-intensity emotional response). The opposite is also possible, when one expresses a weaker emotional response after a high-intensity emotional response by one's partner (compared to a low-intensity response).

In the context of interactions between parents in response to their child's behavior, what factors might influence emotional compensation? One candidate is the situation. Previous work on social groups (Goldenberg et al., 2014) has shown that people tend to conform to others' emotions in ambiguous situations and compensate for others' emotions when they conflict with clear norms. A second factor that might influence compensation is parents' beliefs about how important it is to present a united front.

When emotional compensation does occur, should it be helpful or harmful to relationship satisfaction, defined as the perception of one's partner meeting one's needs and expectations? On the one hand, if compensation were used efficiently with negative emotions, this might reduce emotional escalation and regulate the parental unit. In such cases, compensation should be associated with high relationship satisfaction. On the other hand, compensation may be used to establish moral superiority or express aggression (Cordova et al., 1993). In such cases, compensation should be associated with low relationship satisfaction.

1.3. The present research

The goal of the present research is to examine emotional compensation in parents. We formulated three hypotheses. Our first (Study 1) is that individuals should compensate in situations in which the appropriate emotional response is certain, yet their partner is over or under-reacting to the situation (Goldenberg et al., 2014). We tested this hypothesis via reports of emotional experiences and expressions. Our second hypothesis (Studies 2 and 3) is that individuals should compensate for their partner's emotions if they place a low value on parental unity. Our third hypothesis (Study 4) is that compensation should be related to quality of relationship. We made no predictions regarding the direction of this connection. We report all measures, manipulations, and exclusions in these studies either in the main text or Supplementary materials.

2. Study 1

2.1. When do we compensate? The role of certainty

Study 1 had two goals: (1) to establish that the process of emotional compensation exists in parental interactions; and (2) to investigate the role of emotional certainty in producing emotional compensation versus emotional congruence. To address these goals, participants read anger-inducing parenting scenarios about their child's misbehavior. These scenarios were piloted to either induce high or low degrees of certainty regarding the appropriate emotional response. In order to examine participants' emotional compensation, we then manipulated the intensity of the partner's response in these scenarios. Participants' own emotional experiences and expressions were then measured.

2.1.1. Method

2.1.1.1. Participants. Given that this was the first investigation of emotion compensation in parents, we conducted an a priori power analysis for a potential comparison between the high and low anger response conditions in order to have 80% power to detect a large effect size ($d = 0.70$). Our test yielded an estimated sample size of 35 participants per condition (total of six conditions). We therefore set our sample size at 200 participants. Two hundred and two participants were recruited using the online platform Mturk. All of our Mturk participants were American with at least 100 approved hits and an approval rate of above 95%. We used a few methods to ensure that participants were not repeating the study, including monitoring participants' IP address and creating a filter for participation in our study within Mturk. Participants received 30 cents for their participation in the study (~3–4 min) with the goal of reaching a $5 hourly rate. We omitted two participants from our analysis who incorrectly answered the reading checks, resulting in a final sample of 200 participants (87 males and 113 females; age ranging from 20 to 67, $M = 36.31$, $SD = 10.50$). All participants reported that they had children ($M = 1.97$, $SD = 1.44$). In terms of their marital status, 21.29% of participants were single, 66.83% were married, 11.38% divorced, and one was a widower. In terms of their racial identity 12.5% of participants identified themselves as Black, 6.5% as Latino, 7.5% as Asian, 77% as White and 1% as other. Some participants identified themselves as belonging to more than one racial group.

2.1.1.2. Procedure. Before undertaking the main study, we conducted a pilot study in order to find anger-inducing parenting scenarios that would produce high and low degrees of certainty regarding the appropriate emotional response (see Supplementary materials the details and the scenarios). This examination resulted in 4 final scenarios, two low certainty and two high certainty scenarios.

During the primary study, participants were assigned to one of six conditions which were a combination of two independent variables. The first variable was certainty of the appropriate emotional response (low, high) which was manipulated by giving participants either a high certainty or low certainty scenario from the four pre-piloted scenarios. The second variable was the partner emotional response (low, high, and a control condition with no partner response) which was manipulated by changing the end of the scenarios to include a high anger partner emotional response, a low anger partner response, or no partner response.

2.1.1.3. Measures. We measured participants' expressions of anger towards the child in the situation using the question ('*How much anger do you expect to express when interacting with Daniel*?'). Answers ranged from 1 (*none*) to 7 (*a great deal*). We also measured participants' *emotional experience* towards the child in the situation using a similar question ('*How much anger do you expect to feel when interacting with Daniel*?'). Finally, participants were asked to write an open ended

response to their child in a few words to make sure that they indeed read the scenarios.

2.1.2. Results

Looking first at participants' emotional expression, a 2 (degree of certainty [high, low]) × 3 (partner anger condition [high, low, control]) ANOVA yielded a significant model ($F(5,194) = 8.96$, $p < 0.001$). To understand these effects, we examined the main effect of the model. We first compared the high versus low certainty scenarios. Results indicated significantly higher levels of anger in response to the high certainty parenting scenarios ($M = 4.30$, $SD = 1.58$) compared to the low certainty parenting scenarios ($M = 3.19$, $SD = 1.38$, $b = 1.11$ [0.69, 1.53], $SE = 0.21$, $t(198) = 5.29$, $p < 0.001$, $d = 0.75$). Next, we compared the main effect of the difference between the three partner conditions (combining high and low certainty conditions). Results suggested no significant difference between the conditions ($F(2,197) = 1.22$, $p > 0.250$).

Breaking the model into its components (allowing ourselves to conduct only 2 comparisons), we first examined the interaction between high and low anger and high and low certainty. Results indicated a significant interaction ($b = -1.82$ [-2.81, 0.84], $SE = 0.49$, $t(194) = -3.67$, $p < 0.001$, $d = -0.52$). Looking at the simple effects of the high certainty parenting scenarios, we found that participants in the low anger condition ($M = 4.74$, $SD = 1.43$) expressed significantly higher anger compared to those in the high anger condition ($M = 3.68$, $SD = 1.47$, $b = -1.06$ [-0.77, -0.35], $SE = 0.38$, $t(64) = -2.79$, $p = 0.01$, $d = -0.69$) suggesting emotional compensation. We then looked at the simple effects in the low certainty condition. Results indicated that participants in the low anger condition ($M = 2.83$, $SD = 1.27$) responded with significantly lower levels of anger compared to those in the high anger condition ($M = 3.59$, $SD = 1.61$, $b = 0.76$ [0.10, 1.42], $SE = 0.33$, $t(65) = 2.12$, $p = 0.03$, $d = 0.52$). These results indicated a process of emotional congruence.

Our second analysis examined the interaction between low anger and control with high and low certainty. Results indicated a non-significant interaction ($b = -0.65$ [-1.68, 0.31], $SE = 0.50$, $t = -1.35$, $p = 0.17$). These results suggest that the control condition is located between the high and the low conditions. Looking at the simple effects of the low certainty scenarios, the difference between the low anger condition ($M = 2.83$, $SD = 1.27$) and the control condition ($M = 3.30$, $SD = 1.15$) was non-significant ($b = 0.47$ [-0.23, 1.18], $SE = 0.34$, $t = 1.31$, $p = 0.19$). These results suggest that the control condition is located between the high and the low conditions but closer to the high anger condition.

Next, we examined participants' emotional experience. Although results were in the same direction as emotional expression, they did not yield simple effects of compensation in the high certainty condition (see Supplementary materials for full analysis). These findings suggest that compensation was more emphasized at the expressive level of emotions.

Results in Study 1 suggest two processes, emotional congruence and compensation, and indicate that these two processes are influenced by the certainty of the appropriate emotional response (see Fig. 1). The lack of emotional compensation in participants' emotional experience (as opposed to their emotional expression) suggests that participants' emotional experience was less influenced by their partner response than their emotional expression. This suggests that the regulatory processes that are involved in emotional compensation may be especially relevant at the expressive level of emotions.

3. Study 2

3.1. The role of parental unity

The goals of Study 2 were: (1) to replicate the findings of Study 1; and (2) to further understand the conditions under which
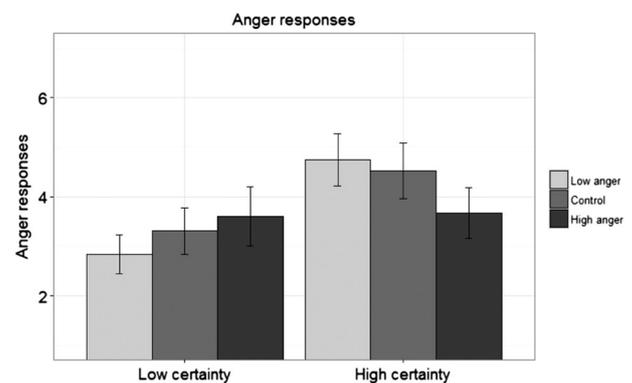

Fig. 1. Anger in response to the low and high certainty parenting scenarios in Study 1. Error bars are 95% confidence intervals.

compensation occurs. More specifically, we hypothesized that partners who placed a high value on unity (compared to those who placed a low value on unity), would tend to show less emotional compensation. To test this hypothesis, we adapted one of the scenarios from Study 1 (due to its effectiveness in eliciting compensation) and measured participants' valuation of parental unity.

3.1.1. Method

3.1.1.1. Participants. In determining sample size for Study 2, our power analysis was based on the effect size of emotion compensation in Study 1 ($d = 0.52$). An a-priori power analysis indicated that sample size of about 50 participants per condition is required in order to have 80% power to detect a large effect size (total of 150 participants). One hundred and forty-five participants were recruited using the online platform Mturk. The criteria for participation in the study as well as participants' payment was similar to Study 1. We omitted nine participants from our analysis who incorrectly answered the reading checks, resulting in a final sample of 136 participants (76 males and 60 females; age ranging from 19 to 64, $M = 35.85$, $SD = 9.30$). All participants reported that they had children ($M = 1.87$, $SD = 1.05$). In terms of their marital status, 17.12% of participants were single, 73.97% were married and 6.16% divorced and 2.74% were widowers. In terms of their racial identity 4.4% of participants identified themselves as Black, 12.5% as Latino, 7.4% as Asian, 78.7% as White and 1% as other. Some participants identified themselves as belonging to more than on racial group.

3.1.1.2. Procedure. Participants read a high certainty parenting scenario regarding a child's misbehavior (see Supplementary material). We manipulated participants' perception of their partner's emotional response towards their child by changing the end of the scenario to be either high, low or no response. Participants were then asked to indicate their own emotional response to the scenario.

3.1.1.3. Measures. To measure valuation of parental unity, we created three items by adapting parenting advice from a book on children's education (Rimm, 2008):"*Parents should always keep a united front when disciplining their children*", "*Parents' independent styles of parenting is helpful to children upbringing (reversed)*", "*Parents should always be in agreement in their responses towards the outside*" ($\alpha = 0.66$). We measured participants' expression of anger as in Study 1.

3.1.2. Results

We used linear regression to examine differences in participants' anger using the low partner response as the base for comparison. Looking first at the differences between the conditions, results indicated that participants in the low partner anger condition ($M = 4.38$, $SD = 1.51$) expressed greater anger than those in the high partner anger condition ($M = 3.76$, $SD = 1.09$, $b = -0.62$ [-1.17, -0.07], $SE = 0.27$,

$t(90) = -2.26$, $p = 0.02$, $d = -0.43$), replicating the findings of Study 1. Unlike Study 1, participants in the control condition also reported significantly lower anger than those in the low partner anger condition ($M = 3.80$, $SD = 1.34$, $b = -0.58[-1.13, -0.02]$, $SE = 0.28$, $t(86) = -2.05$, $p = 0.05$, $d = -0.43$). The location of the control condition suggested that in this case compensation was a result of up-regulation.

Next we assessed the interaction of valuing parental unity and intensity of partner response on participants' anger (focusing on high and low partner anger conditions). We centered the parental unity scale prior to testing the interaction. Results indicated a significant interaction ($F(3,87) = 2.54$, $p = 0.01$) but no main effect for unity ($b = 0.10[-0.16, 0.36]$, $SE = 0.13$, $t(87) = 0.74$, $p > 0.250$). To interpret this interaction, we examined the effect of partner anger for low (1 SD below the mean) and high valuing parental unity (1 SD above the mean, see Fig. 2). Results indicated a significant difference between high and low anger in the low valuing parental unity condition ($b = -1.16 [-1.92, -0.41]$, $SE = 0.38$, $t = -3.08$, $p = 0.01$) and no difference in the high valuing of parental unity condition ($b = -0.09 [-0.83, 0.64]$, $SE = 0.38$, $t = -0.25$, $p > 0.250$). The lack of difference in these values was a bit surprising, as we were expecting participants to behave congruently to their partner when rating parental unity as important. One possible reason for this outcome is the extreme responses by partners in each condition. It is possible that less extreme results would lead to higher congruence.

In general, these results suggest that the process of compensation is influenced by parents with low valuing parental unity. While this study provides an initial indication for the role of valuing parental unity in partners' emotional compensation, these results do not yet provide causal evidence about the role of parental unity beliefs in emotional compensation.

4. Study 3

4.1. Manipulating the value of parental unity

The goal of Study 3 was to provide an experimental examination of the interactive effect that was found in Study 2. We examined this interaction by manipulating both intensity of partner response and the value of parental unity. In order to manipulate parental unity, participants read parenting advice that was ostensibly written by a specialist in children's education. Participants' anger was then measured as it had been in Studies 1 and 2.

4.1.1. Method

4.1.1.1. Participants. Based on effect size of the difference between the high and the low partner condition of Study 2 ($d = -0.43$), an a priori power analysis (power higher than 0.8) suggested a sample size to 68
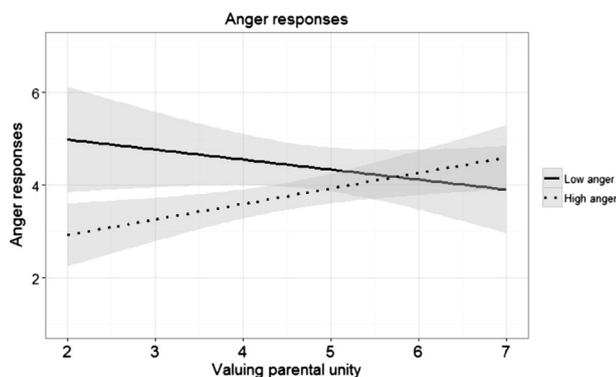
participants per cell (total of about 400 participants). Four hundred participants were recruited using the online platform Mturk. The criteria for participation in the study as well as participants' payment was similar to Study 1. We omitted 5 participants from our analysis who incorrectly answered the reading checks, resulting in a final sample of 395 participants (173 males and 222 females; age ranging from 18 to 73, $M = 36.21$, $SD = 9.90$). All participants had children ($M = 1.91$, $SD = 1.92$). In terms of their marital status, 17.75% of participants were single, 74.34% were married and 7.19% divorced and 0.72% were widowers. In terms of their racial identity 11.1% of participants identified themselves as Black, 8.1% as Latino, 6.3% as Asian and 78.0% as White. Some participants identified themselves as belonging to more than on racial group.

4.1.1.2. Procedure. To manipulate parenting unity, participants were told that they would read parenting advice from a child education expert and then provide their opinion. As a manipulation check, after reading the advice, participants were asked to answer a few questions and summarize the main idea of the advice in their own words. The advice focused on parental unity[2] (see Supplementary material). In the high parental unity condition ($n = 201$), the text discussed the importance of maintaining a united front in children's education. In the low parental unity condition ($n = 194$), the text discussed the importance of presenting children with a balanced perspective. Participants then were asked to rate their agreement with the content of the text as well as to summarize it in their own words. Next, participants were asked to read a parenting scenario that was similar to the scenario in Study 2 and rate their anger to the scenario.

4.1.1.3. Measures. We used the same 3-item scale to measure participants' valuing parental unity as in Study 2 ($\alpha = 0.67$). We measured participants' expression of anger as in Studies 1 and 2.

4.1.2. Results

As expected, participants in the low parental unity condition ($M = 4.12$, $SD = 1.24$) placed lower value on parental unity than those in the high parental unity condition ($M = 4.72$, $SD = 1.15$, $b = 0.60 [0.36, 0.84]$, $SE = 0.12$, $t(393) = 5.04$, $p < 0.001$, $d = 0.50$). Next, we examined differences in anger across the three conditions. Participants in the low anger condition ($M = 4.14$, $SD = 1.45$) responded with higher levels of anger compared to those in the high anger condition ($M = 3.71$, $SD = 1.31$, $b = -0.43 [-0.75, -0.10]$, $SE = 0.16$, $t(272) = -2.60$, $p = 0.01$, $d = -0.31$) and the control condition ($M = 3.80$, $SD = 1.32$, $b = -0.33 [-0.66, -0.00]$, $SE = 0.17$, $t(258) = -1.96$, $p = 0.05$, $d = -0.24$). These results replicated Study 2.

We assessed the interaction of valuing parental unity and intensity of partner response on participant's anger towards the child. Because our main interest was in the difference between low anger and high anger, we examined the interaction of parental unity with these two conditions. Results indicated a significant interaction ($F(3,269) = 4.03$, $p = 0.01$, $d = 1.17$), with no main effect of unity ($b = -0.03 [-0.16, 0.14]$, $SE = 0.08$, $t(270) = -0.36$, $p > 0.250$). Analyses of the simple effects revealed that participants' anger in the low anger condition ($M = 4.36$, $SD = 1.34$) was significantly higher than in the high anger condition ($M = 3.54$, $SD = 1.13$, $b = -0.82 [-1.29, -0.35]$, $SE = 0.23$, $t(132) = -3.45$, $p < 0.001$, $d = -0.60$) suggesting emotional compensation (see Fig. 3). On the other hand, in the high parental unity condition, there was no difference between participants' anger in the low anger condition ($M = 3.92$, $SD = 1.52$) compared to the

Fig. 2. Interaction between partner response and valuing parental unity on participants' anger in Study 2.

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[2] One additional condition featured advice that focused on the importance of responding to a child's misbehavior (high vs. low importance – see Supplementary material). Our assumption was that this advice might play a role in processes of compensation. However, participants' summaries of the text as well as the manipulation check both indicated that they did not fully understand the advice. We therefore did not consider this condition further.
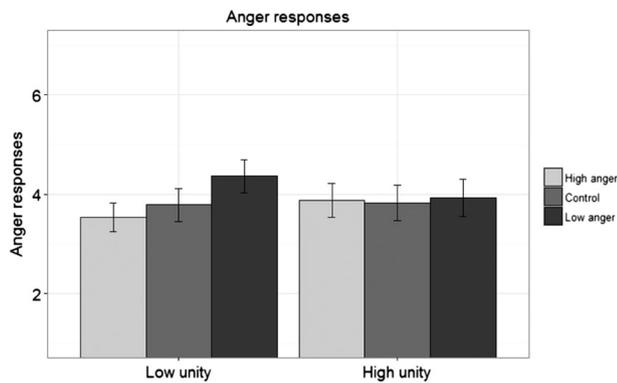
Fig. 3. Interaction between partner response and valuing parental unity on anger in Study 3.

high anger condition (M = 3.87, SD = 1.30, b = −0.05 [−0.51, 0.40], SE = 0.25, t (137) = −0.22, p > 0.250). Results of Study 3 support the notion that valuing parental unity moderates the effect of emotional compensation.

5. Study 4

5.1. Implications of emotional compensation

The primary goal of Study 4 was to assess whether emotional compensation was related to martial quality (see Supplementary material for additional analyses conducted in Study 4).

5.1.1. Method

5.1.1.1. Participants. We aimed for a similar sample size as in Study 2 (50 participants per condition) to allow the examination of an interaction. 150 participants were recruited using the online platform Mturk. The criteria for participation in the study as well as participants' payment was similar to Study 1. We omitted 2 participants who incorrectly answered the reading checks, resulting in a final sample of 148 participants (69 males and 79 females; age ranging from 21 to 73, M = 35.49, SD = 8.91). All participants reported that they had children (M = 1.98, SD = 1.01). In terms of their marital status, 88.62% were married, 10.18% divorced and two were widowers. In terms of their racial identity 10.8% of participants identified themselves as Black, 4.1% as Latino, 3.4% as Asian, 81.1% as White and 1% as other. Some participants identified themselves as belonging to more than on racial group.

5.1.1.2. Procedure. Participants read two high certainty scenarios that were randomly assigned from a set of the four piloted scenarios (two scenarios were used in Study 1 and two scenarios were added to expand the number of scenarios, see Supplementary material). We manipulated the partner's emotional response by changing the end of the scenarios to be either high, low or no response. Participants were then asked to indicate their own emotional response to the scenario.

5.1.1.3. Measures. We measured participants' expression of anger towards their child as in Studies 1–3. After completing their responses to the scenarios, we examined participants' quality of relationship using the Relationship Assessment Scale (or RAS, Hendrick, 1988). RAS is a 7-item scale (α = 0.92) including items such as "*How well does your partner meet your needs?*" (See Supplementary material for the full scale.) Participants rated each item on a 5-Likert scale, high numbers indicating high quality of relationship.

5.1.2. Results

Due to the high correlation between the two scenarios (r(146) = 0.48 [0.35, 0.60], p < 0.001), we averaged participants' responses to

these scenarios and conducted a linear regression to examine the differences between conditions (see comparison between first and second read scenarios in the Supplementary material). Similar to Studies 1–3, we compared the low anger condition to both the high anger and the control conditions. Looking first at the main effects of compensation, as expected, participants in the low partner anger condition (M = 5.23, SD = 1.28) expressed significantly higher levels of anger than those in the high partner anger condition (M = 4.30, SD = 1.18, b = −0.93 [−1.44, −0.41], SE = 0.26, t(96) = −3.56, p < 0.001, d = −0.72), replicating the findings of Studies 1–3. Participants in the control condition (M = 4.65, SD = 1.36) were also significantly lower compared to the low anger condition (b = −0.58, [1.09, 0.27], SE = −0.08, t(101) = −2.31, p = 0.02, d = −0.45). The location of the control condition was similar to Studies 2 and 3 but different than Study 1.

Next we examined how the tendency for emotional compensation predicted quality of relationship. We conducted an interaction of participants' emotional expression to the scenarios X degree of partner's response (low, high and no partner response) predicting quality of relationship. Before conducting the analysis, we examined the distribution of the quality of relationship scale. Using the D'Agostino test of skewness (D'Agostino, 1970), we found that the scale was highly negatively skewed (z = −4.90, p < 001). We conducted an exponential transformation to the scale leading to reduction in the skewness of the data to a non-significant level (z = 1.25, p = 0.20). Results were similar when conducted on the non-transformed data. We then centered the quality of relationship scale prior to testing the interaction.

Looking first at interaction between the low versus high anger conditions and participants' emotional expressions predicting quality of relationship, results indicated a significant interaction (b = −0.33 [−0.66, −0.01], SE = 0.16, t(142) = 2.06, p = 0.04, d = 0.34, see Fig. 4). Examining the simple effects of this interaction suggested that participants' emotional expressions in the low anger partner condition did not predict quality of relationship (b = −0.02 [−0.24, 0.18], SE = 0.10, t(142) = −0.27, p = 0.78). However, participants' emotional responses in the high partner condition were negatively related to quality of relationship (b = −0.36 [−0.61, −0.12], SE = 0.12, t(142) = −2.98, p = 0.01, d = 0.50) such that higher quality of relationship predicted lower anger by participants. These results suggest that emotion compensation predicts quality of relationship only when the partner response is high. Looking at the interaction between the low partner versus control condition indicated no significant interaction (b = 0.13 [−0.15, 0.42], SE = 0.14, t(142) = 0.92, p = 0.35, d = 0.08).

Findings of Study 4 replicated the notion of emotion compensation. In addition, we showed that the tendency to compensate for high partner responses (but not low) predicted higher quality of relationship.
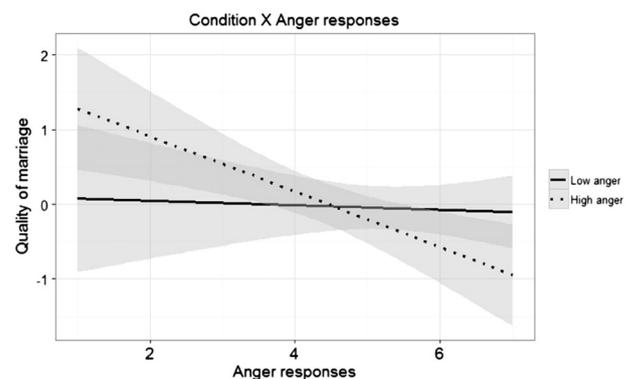

Fig. 4. Interaction between partner response and participants' emotional expression in predicting quality of relationship in Study 4.
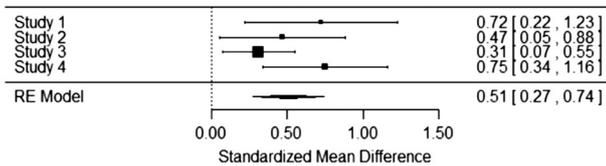
Fig. 5. Forest plot of the standardized mean differences between the low partner response and the high partner response conditions in all 4 studies using a Restricted Maximum Likelihood Estimator (Viechtbauer, 2010). The size of the squares indicates the sample size of each study and the numbers at the right indicate the standardized mean differences with 0.95 confidence intervals. Results indicate an overall standardized mean difference of 0.50 (SE = 0.12; $p < 0.001$) and a non-significant between-study variability ($Q(3) = 4.46, p = 0.21$).

6. General discussion

Our findings introduce the notion of emotional compensation in parental interactions (for a meta-analysis of the compensation findings of Studies 1–4 see Fig. 5). These findings expand the understanding not only of emotional influence, but also of processes of emotion regulation. Thus far, efforts to understand regulatory processes have focused on intrinsic parental regulation with individual level goals. The current findings examine such regulatory processes with considerations to goals expressed by the parental unit. Further research should examine whether these processes can be generalized to other groups. For example, recent work examining emotional dynamics in various types of teams with a focus on congruent processes (Costa, Passos, & Bakker, 2014; Delvaux, Vanbeselaere, & Mesquita, 2015; Páez, Rimé, Basabe, Wlodarczyk, & Zumeta, 2015; Salas et al., 2015) (Costa et al., 2014; Delvaux et al., 2015; Páez et al., 2015; Salas et al., 2015) could greatly benefit from investigating the occurrence of incongruent processes as well.

Behaving congruently and incongruently with other's emotions not only affects the group's response towards the outside world, but may also influence within-group dynamics. The findings of Study 4 provided initial support for such an argument. Emotional compensation for high negative partner responses predicted higher relationship quality. However, this is only an initial examination of the effects of compensation on relationship quality. First, it is possible that emotion compensation in response to positive emotions or low arousal negative emotions would lead to different outcomes. We could also imagine that under some conditions, the tendency to compensate may lead to conflicts, as partners may feel that their emotional response is not being supported. In extreme cases, compensation may even be abused by partners to prove that the other partner's response is wrong or inadequate. Either way, further understanding of these processes can help in developing important tools to improve dyadic interaction and relationships.

While the current findings help us to better understand situations in which partners compensate for each other's emotions, these studies have a few limitations which should be addressed in the future. The first limitation stems from the fact that participants responded to hypothetical scenarios. Our goal was to create scenarios which would allow other researchers to easily examine similar questions. We now have five scenarios which lead to emotional compensation, and two scenarios which lead to emotional congruence. These scenarios can be used by anyone who is interested in examining emotional dynamics between partners. However, future studies should examine these processes using participants' own real life situations and should include real-time partner responses.

A second limitation is the focus solely on anger inducing situations. We chose to focus on anger as it is an especially important emotion parents' interaction and child rearing. However, it is possible that other emotions require different conditions for emotional compensation. For example, compensation may occur only in high arousal emotions, in which there is more room for partners to differentiate their response from that of their partner. Therefore more work should be done on

understanding these processes in low arousal emotions such as sadness. Furthermore, it would be interesting to examine whether the effect of compensation can occur in positive emotions such as happiness or hope. Overall, it is our hope that the current findings open the door to a very interesting and important domain of new inquiry regarding emotional compensation.

Appendix A. Supplementary data

Supplementary data to this article can be found online at doi:10.1016/j.jesp.2016.10.008.

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