CHILDREN'S MASTERY-ORIENTED RESPONSES TO FAILURE: THE EFFECTS OF PARENTAL STRATEGY FEEDBACK AND ATTACHMENT SECURITY

By

Todd Romney Stevens

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ABSTRACT

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Encountering challenges and experiencing failure are commonplace in the course of learning and development. Young children with similar abilities and motivations, however, may respond in different ways to task difficulty and failure. For example, they may display a helpless response to failure and give up, or, they may respond with mastery-oriented behaviors such as maintaining or even increasing effort. Research has shown that the provision of praise, when focused on process (e.g., effort) and use of non-generic labels (e.g., labeling one specific instance), promotes mastery-oriented responses to failure. Whereas praise that focuses on *person* characteristics (e.g., "You're smart") and the use of generic labels (e.g., labeling of an individual or group) may lead to helpless responses to failure. Praise occurs within a social context and the quality of the parent-child relationship may also influence the effects of this feedback. Prior research, however, has not examined how the quality of a child's attachment security to his or her parent may serve as a moderating factor between parental praise and young children's responses to failure. Prior research has also neglected to consider whether suggestions of considering alternative strategies (e.g. "maybe it is possible to think of more unusual, original ideas"), in addition to process praise, strengthens or weakens mastery-oriented responses to failure. This is important to consider because the consideration of alternative strategies may promote a sense of control.

The study examined the relation between maternal praise and children's responses to failure in relation to suggestions of considering alternative strategies and children's attachment

insecurity. Participants consisted of fifty 4-5 year old children and their mothers. Survey data were collected from the fifty mothers to assess the kinds of praise and strategy feedback they used at home, to measure their perception of the child's attachment to the mother, and to assess the child's responses to failure. In addition, a within-subjects quasi-experimental design exposed the fifty children, in random order, to two different praise conditions (i.e., process praise, process praise plus the suggestion to consider alternative strategies) and measured their responses to failure scenarios using puppets.

Results from both the quasi-experimental design study as well as from the survey data revealed that different types of praise (i.e. person, process, process plus the suggestion to consider alternative strategies) were not significantly related to young children's responses to failure. Perceptions of attachment insecurity and gender did not moderate the relationship between the type of praise used and the young children's responses to failure. Perceptions of attachment insecurity and of negative affect were significantly related to young children's responses to failure. The within-subjects design did not reveal any clear predictors of young children's responses to failure scenarios using puppets; however the correlational design showed that the more insecure the child's reported attachment, the more negative the child's reported response to failure. Similarly, the more negative the child's reported affect, the more negative the child's reported response to failure.

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CHAPTER 1 – INTODUCTION

Statement of the Problem

Young children respond to failure in different ways. Imagine two children in two different situations working on the same puzzle. They have the same ability to complete the puzzle, the same expressed desire to complete the puzzle, and the same positive feelings about the puzzle. While these children appear similar in almost every way, when a teacher points out a mistake on the puzzle, the children react in opposite ways. The first child completely gives up on the puzzle, expressing negative feelings and a lack of desire to engage in the task. In contrast, the second child puts forth even more effort to complete the puzzle, expressing positive feelings and a continuing desire to engage the task.

The academic literature has characterized these different ways of responding to failure as helpless and mastery-oriented, respectively. A helpless response involves a marked decrease in performance in the face of failure, whereas, a mastery-oriented response is characterized by stable or improved performance. The advantages of a mastery-oriented response to failure are apparent in how it is measured: superior performance on a given task, greater persistence, more positive affect, and greater intrinsic motivation when faced with failure.

Helpless and mastery-oriented patterns of responding to failure are consistently found in children as young as 4 years old (e.g. Cain & Dweck, 1995; Dweck, 1991; Heyman, Dweck, & Cain, 1992; Smiley & Dweck, 1994). For a long time, it was believed that children in the age range of 4-7 years were invulnerable to helpless responses to failure due to their tendencies to overestimate their abilities and to have high expectations for success (e.g. Stipek & Tannatt, 1984). Studies conducted by Dweck and her colleagues, however, revealed that, even at this young age, some children display reduced persistence, negative affect, and negative self-

perceptions in response to failure (for a review, see Burhans & Dweck, 1995). This research also revealed that, unlike helpless responses of older children which resulted from attributions of low ability, younger children's helpless responses were linked to attributions of failure to low selfworth (Burhans & Dweck, 1995). Burhans and Dweck proposed that this sense of self-worth that is tied to performance on a given task (termed contingent self-worth) is the cause of helpless responses to failure in young children. Due to the tendency of younger children who exhibit helplessness to link failure to their sense of self-worth, the importance of mastery-oriented responses to failure may be especially important during this age in order to promote a developmentally-appropriate, adaptive, and high sense of self-worth.

Given the advantages of a mastery-oriented response to failure, a number of questions are raised: how does a young child develop a mastery-oriented pattern of responding to failure? Can a helpless-oriented response be altered, or is it a stable response? If it can be altered, how can a parent promote a young child's mastery-oriented responses to failure? Attribution theory (Weiner, 1979; 1980) provides a framework for considering these questions. According to attribution theory many behavioral patterns, such as helpless versus mastery-oriented responses to failure, are initiated by attributions, or causal ascriptions. In support of this framework, a number of studies have found associations between children's helpless responses to failure and their attributions of failure to uncontrollable factors, such as ability for older children or a low global sense of self-worth for younger children. On the other hand, a child's mastery-oriented responses to failure to controllable factors, such as effort or the strategy used. In addition, younger children's mastery-oriented responses to failure to controllable factors, such as not particulated with a sense of self-worth that is not contingent on performance.

Based on the attribution theory framework, young children's responses to failure are considered in terms of their attributions, or causal ascriptions, of the situation. When considering how to promote mastery-oriented responses to failure from this perspective, a pertinent question arises: are children's attributions for failure stable or can children's attributions for failure shift over time? While many children demonstrate the same pattern of response to failure over multiple scenarios, it has long been conceptualized as a learned pattern; hence some early studies refer to it as "learned helpless responses to failure." Indeed, a number of studies have shown that children's attributions are shaped by environmental stimuli, such as highlighting different goal orientations (e.g. Elliott & Dweck, 1988) and providing specific types of feedback (e.g. Dweck, 1975).

Due to this ability to influence children's attributions, parents of young children may ask what they can do to promote a child's mastery-oriented responses to failure. One strategy that has been repeatedly highlighted by the current literature to improve young children's masteryoriented responses to failure is the use of process, or non-generic (i.e., specific) praise (e.g., Cimpian et al., 2007; Kamins & Dweck, 1999; Zentall & Morris, 2010). Process praise is defined as praise of controllable factors (e.g., effort, strategy) in contrast to person praise that is defined as praise of innate, uncontrollable factors (e.g., ability, trait). Similarly, non-generic praise is defined as praise that labels a specific instance of behavior (typically with a verbal predicate) while generic praise labels an individual or category (typically with a noun label). Process praise includes a verbal predicate and is classified as non-generic. Person praise uses a noun label and is viewed as generic. Based on experimental studies, process praise for preschool-aged children's successes has been found to lead to significantly more masteryoriented responses to a subsequent mistake, such as described in the introduction above, than

person praise for the same success (e.g., Cimpian et al., 2007; Kamins & Dweck, 1999; Zentall & Morris, 2010).

Despite the superior effects of process praise found in experimental studies where praise is randomly assigned, correlational studies examining the effects of process praise provided by a parent have found weaker relations to young children's responses to subsequent failure. Two studies (Gilmore et al., 2009; Zentall, 2009) found no significant relationship between parental process praise and mastery-oriented responses to failure in young children. One of these studies (Zentall, 2009) found maternal sensitivity in infancy to be a more significant predictor of mastery-oriented responses to failure in toddlers than maternal feedback and praise. Zentall hypothesized that children's internal working models play a role in children's responses to failure. Based on this hypothesis, the lack of significant findings of parental praise on responses to failure may be due to the strong influence of parental attachment confounding the effects of parental praise.

Another study (Kelley, Brownell & Campbell, 2000) found parental process praise to be a significant predictor of mastery-oriented responses to failure, but the relationship was still weaker than predicted. These studies raise the question: How can a weak relationship between parental process praise and children's responses to failure be explained? This question remains largely unaddressed by the current literature. Attachment theory provides a fitting framework to conceptualize the problem. According to attachment theory, the security of a young child's attachment to his or her parent influences internal working models that may influence the child's perceptions of parental statements, such as praise. Based on this framework, new questions arise: Does the quality of children's attachment to their parent moderate the effect of a parental

praise statement? Or, does the quality of children's attachment play such a powerful role that the effects of a praise statement become insignificant?

Other questions raised by the current literature include whether it would be beneficial to supplement process praise with the suggestion of considering alternative strategies. In this study, the "suggestion of considering alternative strategies" is defined as raising the possibility that one or more different approaches could be used to complete a specific task (e.g. "What are other ways that could also work?"). Based on attribution theory (Weiner, 1979; 1980), process praise is beneficial because a child can attribute success to controllable factors, and this conveys the idea that self-worth that is not contingent upon performance (Kamins & Dweck, 1999). In young children, attributions of contingent self-worth have been proposed as the cause of helpless responses to failure (Burhans & Dweck, 1995). When supplemented with the suggestion of considering alternative strategies, process praise can lead a child to attribute successes to controllable events while the consideration of an alternative strategy to improve performance may lead a child to attribute shortcomings in his or her performance to strategy choice. A study conducted by Diener and Dweck (1978) on fifth graders' verbalizations found that in contrast to children with a helpless orientation towards failure who verbalized uncontrollable and stable attributions for their failure, children with a mastery-oriented response to failure did not verbalize attributions for their failure because they did not consider the experience a failure. Instead they considered the experience a controllable opportunity to try out new strategies and learn. The suggestion of considering alternative strategies during a success could thus prime a child to frame failure in this way.

When researchers examine parents' statements to their children that combine process praise and the suggestion that the children might/should consider alternative strategies, they have

used different terms to describe it. Butler (1987) used such a statement in her "comment" condition, which consisted of the phrase "You thought of quite a few different ideas; maybe it is possible to think of more unusual, original ideas." Kamins and Dweck used a similar statement (i.e. "You found a good way to do it, can you think of other ways that may also work?"), which they termed "strategy praise" (Kamins & Dweck, 1999, p. 844). Kelley and colleagues (2000) used the term, "corrective feedback." to code parental statements that were "negative or critical in content but neutral or positive in tone." Such a suggestion can take the form of a question (e.g. "can you think of other ways that may also work?") or a statement (e.g. "maybe it is possible to think of more unusual, original ideas."). In addition, the statements in prior research included a process praise component that explicitly relayed the positive nature of the message (e.g. Butler, 1987; Kamins & Dweck, 1999). Combining the suggestion of considering alternative strategies with process praise is consistent with a mastery-oriented perspective and is more likely to highlight factors that are within the child's control. The effects of parental process praise plus the suggestion of considering alternative on mastery-orientation in response to failure were examined in the current study.

While parental process praise plus the suggestion of considering alternative strategies has not been studied, parental corrective feedback alone has been found to be a more positive and significant predictor of young children's persistence after failure than parental process praise (Kelley et al, 2000). Kamins and Dweck (1999) examined differences between a teacher delivering process praise and a teacher delivering process praise plus the suggestion of considering alternative strategies; however, no significant differences were found. This could be due to the small sample size (N=19) used in the study because it contradicts the findings of a study with a larger sample (N=200; Butler, 1987). Butler found that process praise plus the

suggestion of considering alternative strategies by teachers resulted in higher performance and interest and more attributions to controllable factors among fifth and sixth grade students than a praise statement alone (Butler, 1987). These findings with teachers suggest that a parental suggestion of considering alternative strategies in addition to process praise may be a beneficial pairing that is superior to the parents' provision of process praise alone. Yet the question of whether parental process praise plus the suggestion of considering alternative strategies leads to more mastery-oriented responses to failure than parental process praise alone remains largely unaddressed. In addition, parents' beliefs about the use of process praise plus the suggestion of considering alternative strategies and the potentially moderating effect that attachment security might play on this relationship have yet to be examined.

Studies examining the effects of young children's gender on the relationships between praise dimensions and children's responses to failure also raise an important issue. Critical feedback tends to have a more detrimental effect on young girls' motivation than on young boys' motivation (e.g. Cimipan, 2010; Dweck, 1986; Licht & Dweck, 1984; Roberts, 1991). These findings raise the possibility that process praise plus the suggestion of considering alternative strategies may be perceived as critical and lead to more mastery-oriented responses to failure from young boys than from young girls. From the perspective of attribution theory, these findings can be explained in one of two ways. First, girls may be more likely to attribute failure to uncontrollable factors when presented with critical feedback, resulting in more helpless responses. Alternatively, girls and boys may be equally likely to attribute failure to uncontrollable factors when presented with critical feedback, but girls may be more likely to perceive feedback as critical than boys., Mothers tend to provide more negative specific evaluations and controlling praise for girls and more positive specific evaluations and

informational praise for boys (Alessandri & Lewis, 1993; Pomerantz & Ruble, 1998). This could lead young girls to perceive the suggestion of considering alternative strategies statements from their mothers as critical and negative, while young boys perceive such statements as helpful and positive. The only study that examined the effects of a parental suggestion of considering alternative strategies on responses to failure in young children (Kelley et al., 2000) did not consider the moderating effect of gender. Butler (1987) found no gender effects when examining process praise plus the suggestion of considering alternative strategies; however, this praise was provided by a stranger. Praise from parents may lead to greater gender effects since previous studies (Alessandri & Lewis, 1993; Pomerantz & Ruble, 1998) suggest that parents may develop a pattern of providing differential praise based on gender. In addition, the study conducted by Butler (1987) consisted of a sample of 200 5th and 6th grade students, and other studies have highlighted differing gender effects across different ages (e.g. Corpus & Lepper, 2007). Thus, an important question to examine is: Does gender moderate the effects of process praise plus the suggestion of considering alternative strategies on young children's responses to failure?

Theoretical Framework

This study examined process praise and the moderating influences of attachment security and gender on young children's responses to failure using attribution and attachment theories.

Attribution Theory

Attribution theory provides a useful framework for considering the effects of praise on young children's responses to failure. Attribution theory posits that many behavioral sequences are initiated by a causal ascription, or attribution, for an event (e.g. Weiner, 1980). Three dimensions of causality that have been identified are locus, controllability, and stability (Weiner,

1979). Locus refers to an individual's ascription of causality to internal or external factors. Controllability refers to the ascription of causality to factors within an individual's control or factors outside of an individual's control. Lastly, the dimension of stability refers to the ascription of causality to stable factors or to factors that fluctuate over time. Locus and controllability have been identified as the most central dimensions to attribution theory because these two dimensions are the most influential in initiating behavioral sequences, although stability is also predictive of changes in future expectancies and is closely tied to the dimensions of locus and controllability. According to attribution theory, making an attribution along the dichotomous controllability and locus dimensions gives rise to an affective, or emotional, response. This emotional response, in turn, leads directly to a behavioral response.

Expanding on an example from a study conducted by Heyman and colleagues (1992), if a preschooler watches a classmate steal their crayon, scribble on their paper, and spill their juice, he or she could attribute the classmate's behavior to an internal, uncontrollable factor, such as an innate, stable, badness. This would lead to an emotional response, such as anger or disgust. This emotional response, in turn, would lead to a behavioral response, such as avoiding the classmate or treating them negatively. Alternatively, the preschooler could attribute the classmate's behavior to an external, flexible, controllable factor, such as the child's lack of understanding of the rules. This would lead to a different emotional response, such as pity or sympathy. This, in turn, would lead to a different behavioral response, such as befriending the classmate and explaining the rules. Attributions of causality have been linked to a variety of phenomena, including help-giving (e.g. Weiner, 1980), self-rewarding behaviors (e.g. Graham & Weiner, 1991), collaboration on group projects (e.g. Peterson & Schreiber, 2006), and learned helplessness (e.g. Abramson et al., 1978).

Learned helplessness is described by Seligman, Maier and Geer (1968, p. 258) as "the learning (or perception) of independence between the emitted responses of the organism and the presentation and/or withdrawal of aversive events." In other words, learned helplessness is an individual's attributions of aversive events such as failure due to factors over which they have no control. Research has found that individuals identified as exhibiting learned helplessness also display marked decreases in performance in response to failure (Diener & Dweck, 1978; Dweck, 1975; Dweck & Bush, 1976; Dweck & Reppucci, 1973). In contrast, mastery-oriented individuals, who perceive that they have control over a failure situation, display consistent or improved performance in response to failure (Diener & Dweck, 1975). Learned helplessness is also linked to negative affect in response to failure (e.g. Diener & Dweck, 1978). These findings are notable because, before failure, individuals displaying helpless and more mastery-oriented responses to failure exhibit similar performance, motivation, and abilities (e.g. Licht & Dweck, 1984; Kamins & Dweck, 1999).

Children displaying helpless responses to failure tend to attribute failure to internal, uncontrollable, and stable factors, such as lack of ability (Diener & Dweck, 1978). In contrast, mastery-oriented children "did not appear to think they were failing. Rather than viewing unsolved problems as failures that reflected on their ability, they appeared to view the unsolved problems as challenges to be mastered through effort" (Dweck & Leggett, 1988, p. 258).

Attribution theory provides a cognitive framework for conceptualizing how one child can demonstrate poor affective and behavioral responses to failure while another child with similar abilities can demonstrate a positive affective and behavioral response to the same situation. The child who attributes failure to internal, uncontrollable, stable factors will demonstrate poor affective and behavioral responses. On the other hand, the child who does not identify the same

situation as a failure because they attribute the same events to controllable, flexible factors is more likely to demonstrate the positive affective and behavioral responses.

The learned helplessness literature has also contributed to the further development of attribution theory. Dweck (1986) proposed that individuals develop implicit theories of intelligence (i.e. attributions of intelligence) that lead to performance or learning goals, and that these goals lead to mastery-oriented or helpless responses to failure. Research has supported the hypothesis that individuals exhibiting learned helplessness (i.e., attribute intelligence to uncontrollable, stable factors and respond poorly to failure) are more likely to focus on performance goals, while mastery-oriented individuals (i.e. attribute intelligence to controllable, changeable factors and respond adaptively to failure) are more likely to focus on learning goals (e.g., Nicholls, 1984).

Research has also examined developmentally-appropriate explanations for helpless versus mastery-oriented responses to failure. Based on past research (e.g. Heyman et al., 1992), Burhans and Dweck (1995) noted that in the face of failure, children ages 4-5 are more concerned with their general goodness or badness, as opposed to their ability or intelligence. They also argued that children of this age can make attributions of effort or ability, but they are not as meaningful as they are to children at a later age. They proposed that self-worth that is contingent upon behavior or performance is the cause of young children's helpless responses to failure. According to Burhans and Dweck:

Perhaps, then, young children have a global conception of self that may be evaluated in terms of 'good' versus 'bad.' If so, then it might be this global self that some children indict following failure. That is, for some children, task failure might mean to them that they are bad or unworthy (Burhans & Dweck, 1995 p. 1727).

Research on 4-5 year olds supports this model, with children demonstrating helpless responses being more likely to rate their self-worth as contingent to their performance (for a review, see Burhans & Dweck, 1995). In addition, helpless children were significantly more likely to consider "badness" to be a stable trait.

In other words, Burhans & Dweck (1995) proposed that children from the ages of 4-5 who exhibit learned helplessness still attribute their failure to factors that are internal, uncontrollable, and stable, but rather than attributing their failure to intelligence, or a lack of competence at the activity, they attribute their failure to a more global "badness." Based on this framework, Kamins and Dweck (1999) hypothesized that person praise would lead children to attribute failure to stable, uncontrollable factors and teach children that their competence and worth is dependent upon their performance, while process praise would lead children to attribute failure to flexible, controllable factors and teach children that their performance is independent of their competence and worth. Kamins and Dweck's (1999) research supported these hypotheses, with person praise leading to significantly lower ratings of competence, intelligence, and overall "goodness" from preschoolers than process praise. In addition, person praise led preschoolers to display lower levels of persistence and more negative affect than process praise. Considering this research and theory also provides a rationale for the benefits of providing the suggestion of children considering alternative strategies in addition to process praise. Specifically, process praise plus the suggestion of considering alternative strategies highlights the fact that the child has control to improve his or her performance. It also provides evidence to the child that they are worthy of praise even though his or her performance is not perfect. The feedback could also teach children that even when their performance is poor, they have control over changing their strategy to improve their performance.

In addition to measures of attributions, affect, and persistence after failure experiences, another measure commonly used as an indicator of a young child's mastery-oriented response to failure is intrinsic motivation to continue a task after experiencing failure on that task (e.g. Cimpian et al., 2007). Intrinsic motivation has been defined as "when students value (or can learn to value) participation in the activity itself" (Brophy, 2004, p. 183). Intrinsic motivation has been consistently linked with persistence (e.g. Grant, 2008), as well as other positive outcomes not associated with responses to failure such as academic performance, well-being, and health (e.g. Grolnick, Ryan & Deci, 1991; Ryan & Deci, 2000).

Attachment Theory

Attachment theory also provides a conceptual framework to examine the parent-child relationship as a moderator of the relationship between different praise conditions and young children's responses to failure. According to attachment theory, a powerful bond forms in the first several months of life between an infant and the mother (or primary caregiver; Bowlby, 1988). This bond influences the child's internal working model of the self and others (Bowlby, 1988). If the child develops a secure attachment to his or her mother, then they develop an internal working model of the caregiver as responsive to their needs and respectful of his or her autonomy, and an internal working model of the self as an acceptable and capable individual who can explore the world around them. If the child develops an insecure attachment to his or her mother, then they develop an internal working model of the self as an anxious, ambivalent, or conflicted individual who is unacceptable or unworthy. These internal working models allow the child to predict the attachment figure's likely behavior, and to plan his or her own responses.

The child's internal working models shape cognitions about social information (for a review, see Dykas & Cassidy, 2011). Children with a secure attachment exhibit a more adaptive social information processing pattern that includes an internal locus of control, more accurate recall of social information, and more accurate attributions of social behavior. On the other hand, children with an insecure attachment exhibit a more maladaptive social information processing pattern that includes an external locus of control (Hortacsu, 1994), less accurate recall of social information (linked to suppression in one study [Kirsh & Cassidy, 1997] and a greater focus on negative social cues in another study [Ziv et al., 2004]), and more negative and inaccurate attributions of social behavior (Suess et al., 1992; Ziv et al., 2004). While this applies especially to the parent-child relationship, attachment security to the parent has also been found to influence children's views of peers, teachers, and others (e.g. DeMulder et al., 2000).

Based on this perspective, a child's attachment security to the primary caregiver would shape a child's internal working models, which would influence the child's perceptions of process praise, especially process praise from a parent. If the child has a secure attachment to the primary caregiver, then he or she would be inclined to perceive process praise accurately, focusing on the positive information and attributing their success to controllable factors. If the child has an insecure attachment to the primary caregiver, then the internal working models would incline them to perceive process praise inaccurately based on the child's suppression of information, greater memory of negative information, and negative attributions for the parent's behavior and attributions of no control.

Attribution theory and attachment theory both serve as beneficial frameworks for this study. Attribution theory demonstrates how different forms of feedback can influence young children's responses to failure while attachment theory sets the stage for considering the

influence of the feedback coming from the child's parent. Not only do they inform hypotheses and influence the methods, but they also assist in more clearly defining the purpose of the study. *Purpose of the Study*

The purpose of this study is to compare the effects of parental process praise and parental process praise plus the suggestion of considering alternative strategies on children's motivational response to failure. This was examined by conducting a study that utilizes two different designs with parent-child dyads. A correlational design examined the relationships between mothers' reports of types of praise used with their 4-5 year old children and mothers' reports of the children's responses to failure. A strength of this design is that it allows for an examination of the use of praise from the parent's perspective. A weakness of this design is that the correlational nature does not allow for an analysis of causality. A within-subjects quasiexperimental design was also used to examine the effects of process praise and process praise plus the suggestion of considering alternative strategies on young children's response to failure. This study uses an analogue behavioral observation method of assessing the 4-5 year old children's responses to failure. The children acted out task scenarios with a puppet in two different conditions where a parent puppet provides the praise. The praise conditions were presented in random order over the course of two sessions that are at least one week apart. A strength of this within-subjects quasi-experimental design is that it allows for a clearer distinction between cause and effect. A weakness of this design is that the construct validity of the measures can be compromised by the degree to which the tasks the child performs are different from salient events and stimuli in the natural environment (Haynes, 2001, p. 77). Both of these designs were used to examine the study's questions, allowing for a more complete

picture of the real-world relationships and causal factors than could be gathered from either design alone.

While the current parenting literature focuses on praise as an effective strategy for promoting children's social competence (e.g. Webster-Stratton, 2008), the potential benefits on young children's responses to failure by suggesting the consideration of alternative strategies in addition to praise has received limited attention. While it is possible that adding a suggestion of considering alternative strategies to praise could add a level of complexity to the statement, previous research suggests that young children can comprehend and differentiate these statements. The study that compared process praise to process praise plus the suggestion of considering alternative strategies on young children had a small sample size, but it suggested that adding such a statement has positive effects similar to process praise alone, suggesting that the statement is not so complex that it has a detrimental effect on young children (Cimpian et al., 2007). Theoretically, the suggestion of considering alternative strategies might lead to a more mastery-oriented approach to failure since it highlights the facts that the child's performance is validated and valued despite imperfections and that the child has control over improving their performance (Diener & Dweck, 1978).

This study also aims to examine parental beliefs about the effects of process praise, and process praise plus the suggestion of considering alternative strategies. This was examined by analyzing participating mothers' responses to questions about the effects of different types of praise statements on their children's task motivation. No studies have considered parenting beliefs about the effects of process praise plus the suggestion of considering alternative strategies in comparison to process praise alone. Based on the emphasis in the current parenting literature on process praise, parents might consider a process praise statement to have more beneficial

effects than process praise plus the suggestion of considering alternative strategies. On the other hand, parents may recognize the potential benefits of including the suggestion of considering alternative strategies with a process praise statement, based on their experiences or perspectives.

In addition, this study considered the attachment of the children to their primary caregivers as a moderating factor between parental praise and the children's response to failure. This was examined by having the participating mothers complete a questionnaire surveying their perception of the child's attachment, and by comparing the results of this survey to data examining the relation between praise dimensions and children's responses to failure. Attachment security was also considered in relation to children's response to failure.

Current studies have found indicators of secure attachments to be significant predictors of children's mastery-oriented responses to failure. Attachment theory also provides a framework that explains how attachment to a primary caregiver would influence future interactions with parents and others. Lastly, the purpose of this study was to examine whether gender moderated the relation between praise condition and the child's response to failure. Gender was investigated as a moderator in both the quasi-experimental and correlational designs. Current research has not examined how gender might moderate the effects of parental process praise plus the suggestion of considering alternative strategies on young children's response to failure, despite the fact that young girls tend to react more negatively to critical feedback than young boys.

The potential benefits of the suggestion of considering alternative strategies in addition to process praise have broad implications for how parents and teachers should provide feedback to children. It could lead to more parents and teachers pairing the suggestion of considering alternative strategies with process praise in response to a child's behavior to enhance mastery-

oriented responses to failure. There are also many implications for the potentially moderating effects of the child's attachment to the parent on the effects of parental praise. A moderating effect of attachment could highlight the importance of parents sensitively and responsively addressing their children's needs from an early age. It could also highlight the need to consider the context of complex relationships to thoughtfully provide feedback that will enhance mastery-oriented responses to failure. Lastly, the potentially moderating effects of gender on the relationship between process praise plus the suggestion of considering alternative strategies has implications for meeting the differential needs of girls and boys. If there is a moderating effect, then process praise plus the suggestion of considering alternative strategies may be a more beneficial strategy for males than for females.

Research Questions and Hypotheses

The research questions are:

1. How does parental process praise plus the suggestion of an alternative strategy affect young children's mastery-oriented responses to failure compared to parental process praise alone?

Based on an attribution theory framework, it was hypothesized that process praise plus the suggestion of considering alternative strategies would lead to more mastery-oriented responses to failure compared to process praise alone.

2. Do parents' perceptions of their children's attachment security moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

It was hypothesized that the more securely children are attached to their parents, the more mastery-oriented their response would be to failure after receiving process praise plus the suggestion of an alternative strategy compared to process praise alone. The less securely attached to their parents, the more likely children would be to exhibit helpless responses to

failure after receiving process praise plus the suggestion of an alternative strategy compared to process praise alone.

3. Does the child's gender moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

It was hypothesized that gender would serve as a moderator such that girls display less mastery-oriented responses after process praise plus the suggestion of an alternative strategy than process praise alone. In contrast, boys were predicted to display mastery-oriented responses to failure after process praise as well as after process praise plus the suggestion of an alternative strategy.

4. What do parents believe about the effects of parental process praise and parental process praise plus the suggestion of considering alternative strategies on children's mastery-oriented responses to failure?

The question is exploratory and examines parents' beliefs about the effectiveness of process praise compared to process praise plus the suggestion of considering alternative strategies.

CHAPTER 2 – LITERATURE REVIEW

Introduction

The review of the current literature is organized into four sections. First, the literature documenting helpless and mastery-oriented responses to failure in young children is reviewed and research supporting an attributional framework for conceptualizing responses to failure in young children is highlighted. Second, research on the influence of praise and feedback on young children's responses to failure is reviewed. In the third section, the influence of the parent-child relationship on young children's responses to failure is responses to failure and their perceptions of parental feedback are considered. Lastly, the implications of this literature for practice and future research are discussed.

Young Children's Responses to Failure

While patterns of helpless and mastery-oriented responses to failure have been found in older children since the initial conceptualization of these constructs (e.g. 8-13 year old children; Dweck, 1975), researchers assumed for many years that similar responses could not be found in preschool-aged children (e.g. Stipek & Tannatt, 1984). For instance, after finding that preschool-aged children are more likely to provide positive self-assessments than older children, Stipek and Tannatt (1984) suggested that young children may ignore any information that indicates low ability. Yet later studies that examined young children's persistence, affect, and attributions in response to failure revealed that the same patterns of helpless and mastery-oriented responses to failure are evident in children as young as four years of age (e.g. Smiley & Dweck, 1994).

When considering persistence on a task during which a child had experienced failure and the reason for continuing the task, Smiley and Dweck (1994) found that 51% of preschool and kindergarten aged children displayed a non-persistent response while 49% displayed a persistent

response. The children who displayed a non-persistent response also reported significantly more negative affect and less confidence in their ability after the failure trials, consistent with the helpless pattern of responding to failure observed in older children. On the other hand, the children who displayed a persistent response also reported significantly more positive affect and maintained or improved confidence in their ability after the failure trials, consistent with the mastery-oriented pattern of responding to failure observed in older children. In addition to the helpless versus mastery-oriented patterns of persistence, affect, and attributions of ability found in older children, Heyman and colleagues (1992) found that kindergarten-aged children displaying the helpless pattern of responding to failure were significantly more likely to attribute people's actions to their "goodness" or "badness" and to consider behavior to remain stable and unchanged over time. On the other hand, children displaying the mastery-oriented pattern of responding to failure were significantly more likely to separate people's actions from their "goodness" or "badness" and to consider behavior to change over time. These studies provide strong evidence that preschool-aged children are capable of displaying helpless and masteryoriented responses to failure. Furthermore, this research provides evidence that children of this age are capable of making attributions and that these attributions are linked to behavior.

More recent linguistic studies provide additional evidence that, not only are preschoolaged children capable of making attributions, but that they use subtle linguistic cues to shape their attributions. For example, a statement can provide generic or nongeneric descriptions of a category or individual (e.g. Cimpian, 2007). In focusing on an individual, generic statements make a claim about an individual as a whole, while nongeneric statements make a claim about an individual in the context of a specific event or episode. Oftentimes the distinctions between sentences that use generic and nongeneric labels are subtle (e.g. she is a carrot-eater versus she

eats carrots whenever she can; Gelman & Heyman, 1999). Yet studies have found that these generic or nongeneric cues influence the causal attributions of children as young as four years of age (e.g. Cimpian, 2010; Cimpian & Erickson, 2012; Cimpian et al., 2007; Gelman & Heyman, 1999). More specifically, generic sentences lead young children to generic conceptualizations and attributions of failure to stable traits or skills (e.g. Cimpian, 2010; Cimpian & Erickson, 2012; Cimpian et al., 2007; Gelman & Heyman, 1999). On the other hand, nongeneric sentences lead young children to nongeneric conceptualizations and attributions of failure to flexible factors such as effort or strategy. These studies demonstrate that, not only are young children able to make causal attributions based on generic versus nongeneric cues, but they also use these causal attributions to make inferences about an individual's future behavior. For example, Gelman and Heyman (1999) found that five year old children who were exposed to nongeneric language made predictions that the character's future behavior was more flexible while children who were exposed to generic language made predictions that the character's future behavior was more stable.

The implicit cues in different types of verbs have also been found to shape the attributions of children as young as three to four years of age (e.g. Corrigan & Stevenson, 1994; Rudolph, 2008). Verbs are composed of two categories: action verbs that describe actions (e.g. run, yell, etc.) and state verbs that describe states (e.g. feel, consider, etc.). Action verbs are further broken up by distinguishing agent-patient action verbs and agent-evocator action verbs. In a statement with an agent-patient action verb (e.g. hits), the subject is an agent that completes the verb on the object, or patient (e.g. hits). In a statement with an agent-evocator action verb (e.g. answers), the subject is an agent that is reacting to the object, or evocator. State verbs can also be further divided into two categories: stimulus-experiencer state verbs and experiencer-

stimulus state verbs. In a sentence with a stimulus-experiencer state verb (e.g. astonishes), the subject is a stimulus that evokes the verb from the object, or experiencer. In a sentence with an experiencer-stimulus state verb (e.g. admires), the subject is an experiencer of the verb that is evoked by the object, or stimulus.

Young children attribute the cause of actions described with agent-patient action verbs or stimulus-experiencer state verbs to the subject of the sentence, while they attribute the cause of actions described with agent-evocator action verbs (e.g. answers) or experience-stimulus state verbs (e.g. admires) to the object of the sentence (e.g. Corrigan & Stevenson, 1994; Rudolph, 2008). It is of particular importance to note Rudolph's (2008) report that three and five year olds were reportedly able to answer causal questions (e.g. "Why does this happen?") with ease, and only 0.5-2% of these children's responses were missing values. Similarly, Corrigan and Stevenson (1994) reported that when three and four year olds were asked to invent stories about verb statements, the stories tended to contain information about the causation of the events described by the verbs.

Cumulatively, the findings from the linguistic development literature provide strong evidence that 3-5 year old children are capable of making causal attributions and that these causal attributions are shaped by subtle linguistic cues. Next, the influences of different types of praise and feedback on young children's responses to failure are considered.

Praise and Young Children's Responses to Failure

Different types of praise and feedback in response to children's successes have been found to influence children's responses to failure. Praise is being defined as "positive evaluations made by a person of another's products, performances, or attributes, where the evaluator presumes the validity of the standards on which the evaluation is based." (Kanouse,

Gumpert, & Canavan-Gumpert, 1981, p. 98). This definition encompasses the multi-dimensional and categorical praise. For instance, this definition of praise distinguishes positive evaluations "of another's products, performances, or attributes." This aligns with an attribution theory framework, which highlights the dimensions of product praise, process praise, and person praise (Corpus & Lepper, 2007). Product praise is defined as praise of the specific product that the child completes (e.g. a completed homework assignment). Process praise is defined as praise of factors related to the process an individual went through (e.g. effort, strategy). Person praise is defined as praise of a person's innate traits or abilities (e.g. intelligence). From an attribution theory perspective, process praise leads a child to make causal attributions of his or her actions to the flexible, controllable factor being praised (e.g. effort, strategy). Alternatively, person praise leads a child to make causal attributions of his or her actions to the stable, uncontrollable factor being praised (e.g. intelligence). These categories of praise also correspond with the generic and nongeneric labels previously discussed. Based on the linguistic content, process praise and product praise meet the criteria of nongeneric statements. These statements make references about specific instances of behavior. On the other hand, person praise meets the criteria of generic statements. These statements make references about an individual across situations.

The general versus specific dimensions of praise are also encompassed by the above definition. Specific praise is praise that is connected to a specific behavior (e.g. good clapping) while general praise is praise that is not connected to a specific behavior (e.g. good; Chalk & Bizo, 2004; Stevens et al., 2011). From a behavioral perspective, specific praise is beneficial due to the more precise description of the behavior that is being reinforced. Another dimension of praise is controlling versus informational. According to cognitive evaluation theory, praise has two functions (Kast & Connor, 1988). One function of praise is an informational aspect that

indicates the appropriateness of the behavior. The second function of praise is a controlling aspect that indicates the expectation of a certain performance. Informational praise highlights the first function while controlling praise highlights the latter.

The motivational effects of praise have been the subject of frequent study and debate for decades; however, the effects of praise on young children's responses to failure have only become an area of study over the last fifteen years. Studies examining young children's responses to failure have focused on the contrasting effects of person praise and process praise. Three studies used a similar methodology and found that process praise led young children to significantly more mastery-oriented responses to failure while person praise led to significantly more helpless responses to failure (e.g. Cimpian, 2007; Kamins & Dweck, 1999; Zentall & Morris, 2010). The participants in these studies ranged from preschool to first grade. The procedure for each study involved having the child use a puppet or doll to act out scenes and randomly receive person or process praise from a teacher figure. The children used the puppet or doll to act out failure scenarios and their responses to failure were measured based on their willingness to persist at the task that they experienced failure on, their affect, their motivation to engage in the task on a separate occasion, and their attributions for failure to stable, uncontrollable factors or flexible, controllable factors. Each study found process praise to lead to significantly more persistence, positive affect, motivation, and attributions for failure to flexible, controllable factors than person praise.

Another study examined the effects of praise on preschoolers' responses to feedback, but used a different methodology (Corpus & Lepper, 2007). Instead of only comparing different categories of praise, they included a neutral feedback condition as well. They also provided praise directly to the participants while they worked on two puzzles, as opposed to praising a doll

or puppet. They found that person praise, process praise, and product praise all led to significantly higher motivation to engage in a task ten days after experiencing a task failure compared to neutral feedback. When only examining the effects of the three praise conditions, the same pattern emerged as was found in the previous studies, with process praise leading to higher motivation and more controllable attributions than person praise. Other studies with different conceptual frameworks have utilized different dimensions of praise, such as the informational vs. controlling (e.g. Harackiewicz, 1979; Kast & Connor, 1988; Pittman et al., 1980; Ryan, 1982; Ryan, Mims and Koestner, 1983) and the general vs. specific dimensions (e.g. Chalk & Bizo, 2004; Fueyo, Saudargas & Bushell, 1975; Sutherland et al., 2000). However, due to the lack of focus on causal attributions that lead to helpless or mastery-oriented responses to failure, studies utilizing these frameworks have examined general motivational or behavioral outcomes as opposed to responses to failure.

It is important to note the differentiation between the terms "praise" and "feedback" in the current literature. Feedback has been defined as "more neutral forms of recognition" (Henderlong & Lepper, 2002, p. 775) than praise. Different types of feedback have also been found to relate to young children's responses to failure. Corrective feedback is one form of feedback that has been found to increase young children's mastery-oriented responses to failure (Kelley et al., 2000). Corrective feedback was defined as statements that were "negative or critical in content but neutral or positive in tone." (Kelley et al., 2000, p. 1064). An example of corrective feedback would be, "That is not the right piece," stated in a neutral or positive tone. Criticism is another form of feedback that has been found to influence young children's masteryoriented responses to failure, although studies examining this influence are somewhat contradictory (Kamins & Dweck, 1999; Kelley et al., 2000). The effects of criticism mirror that

of praise in a study conducted by Kamins and Dweck (1999), with person criticism leading young children to display more helpless responses to failure and process criticism leading young children to display more mastery-oriented responses to failure. On the other hand, Kelley and colleagues (2000) found that person and process criticism both undermine young children's responses to failure compared to person and process praise. These studies suggest that person and process criticism may lead to the same differential effects on responses to failure as person and process praise, but that praise is a more beneficial alternative to criticism.

Besides praise, another type of statement that may influence young children's responses to failure is the suggestion of considering alternative strategies. When combined with process praise, the suggestion of considering alternative strategies may lead to more mastery-oriented responses to failure than process praise alone (Butler, 1987; Kamins & Dweck, 1999). Two studies considered the effects of process praise plus the suggestion of considering alternative strategies using similar statements ("You found a good way to do it, can you think of other ways that may also work?", "You thought of quite a few ideas; maybe it is possible to think of more different ideas."), but found conflicting results. When examining the effects of process praise plus the suggestion of considering alternative strategies on fifth graders responses to failure, Butler (1987) was surprised to find this statement to be lead to higher performance and interest on a task than praise alone. More directly related to responses to failure, Butler found that process praise plus the suggestion of considering alternative strategies led to more attributions to controllable factors such as effort and fewer attributions to uncontrollable factors such as ability. Process praise plus the suggestion of considering alternative strategies leading to more attributions to controllable factors is a finding that aligns with attribution theory. Specifically, process praise ties the child's *success* to controllable factors and frames the statement in a

positive light, while the suggestion of considering alternative strategies ties the child's potential *improvement* to a controllable factor that the child can turn to when faced with a future failure.

Despite the theoretical benefit of process praise plus the suggestion of considering alternative strategies, a study conducted by Kamins and Dweck (1999) did not find significant differences between kindergartners who received process praise alone and kindergartners who received process praise plus the suggestion of considering alternative strategies. Still, this finding does not indicate that process praise plus the suggestion of considering alternative strategies has negative effects on young children's responses to failure. In fact, process praise and process praise plus the suggestion of considering alternative strategies were both found to lead to more mastery-oriented responses to failure than person praise or product praise. The small sample size (10 participants in each condition) may explain the lack of significant differences in this study. In comparison, there were over twice as many participants in the study examining the process and person praise conditions. These two studies indicate that adding the suggestion of considering alternative strategies to process praise can, at the very least, lead to similarly mastery-oriented responses to failure as process praise alone, but may even lead to more mastery-oriented responses to failure than process praise alone. Additional study of the effects of process praise plus the suggestion of considering alternative strategies can help to clarify its effect.

While the effects of feedback and praise on children's responses to failure have been well documented, there are factors that moderate this relationship. Gender has been found to moderate the effects of praise or feedback that is evaluative or that may be perceived as diminishing perceived autonomy or control (e.g. Cimpian 2010; Corpus & Lepper, 2007; Dweck 1986; Licht & Dweck 1984; Roberts, 1991). More specifically, feedback of this nature tends to

lead to more detrimental effects on motivation and responses to failure in girls than boys. For example, Cimpian (2010) found that when a teacher pointed out a mistake after a nongeneric gender statement (e.g. "There is a girl who is really good at this game!"), six and seven year-old boys displayed more motivation to continue the task than girls. Similarly, other studies have found that failure feedback leads to more aversive motivational and behavioral outcomes for girls than for boys (e.g. Dweck & Reppucci, 1973; Nicholls, 1975). Furthermore, research has consistently shown that praise with cues that diminish perceived autonomy or control tend to have more negative effects on girls than boys (e.g. Corpus & Lepper, 2007; Kast & Connor, 1988; Koestner, Zuckerman & Koestner, 1989; Zinser, Young & King, 1982).

One explanation for the gender effects of feedback and praise that is evaluative and that diminishes control or autonomy is that girls are socialized to be more aware of such cues. The differential types of feedback that have been found to be given to boys and girls at home and school lend support to this view. Research has found that by the toddler years, mothers provide more negative specific evaluations and controlling praise for girls and more positive specific evaluations and informational praise for boys (Alessandri & Lewis, 1993; Pomerantz & Ruble, 1998). The opposite pattern emerges as children enter school, with teachers providing more negative feedback to boys (Burnett, 2002), while providing more process praise to girls (Dweck et al., 1978). This pattern of girls receiving more negative evaluations and controlling praise from an early age may lead to them being more sensitive to evaluation and cues that diminish control or autonomy. In contrast, boys' lack of exposure to these negative forms of feedback at an early age may contribute to less sensitivity to such cues. While the effects of gender on the relationship between process praise plus the suggestion of considering alternative strategies and
young children's responses to failure has not been considered, girls may be more aware of the controlling and evaluative cues in the suggestion of considering alternative strategies.

Age also moderates the effects of praise and feedback on children's responses to failure. Older children tend to attribute a lower ability to the recipient of praise than the recipient of neutral or critical feedback, while younger children tend to attribute a higher ability to the recipient of praise (Barker & Graham, 1987). Furthermore, the effects of different types of praise may be moderated by age. Corpus and Lepper (2007) found that process praise led fourth and fifth grade students to higher motivation to persist on a task after failure than person praise. While the same pattern emerged in the younger children, the differential effects of person and process praise were not significant. As previously discussed, this lack of significance was likely due to the inclusion of a neutral feedback control condition, but it indicates that the effects of person versus process praise on children's responses to failure increase with age.

Yet, another line of research suggests that person and process praise may lead to greater differential effects in younger children's responses to failure than older children's responses to failure. As previously discussed, a number of linguistic studies have found that by preschool, children use subtle cues in language to develop causal attributions that influence their judgments (Cimpian, 2010; Corrigan & Stevenson, 1994; Gelman & Heyman, 1999; Rudolph, 2008). Furthermore, the tendency for younger children to think of traits in terms of categories as opposed to dimensions has led to the proposition by Gonzalez, Zosuls, and Ruble (2010) that children of this age make more causal inferences from subtle linguistic labels than older children. In support of this hypothesis, Cimpian (2010) found that generic versus nongeneric gender statements led to different patterns in 4-5 year olds and 6-7 year olds. Specifically, 4-5 year old children who received generic or nongeneric gender statements displayed similar levels of

motivation before a failure experience, but those who received a nongeneric gender statement displayed greater motivation after the failure experience than those who received a generic gender statement. In contrast, 6-7 year old children who received generic or nongeneric gender statements displayed different levels of motivation before the failure experience, but similar levels of motivation after the failure experience. Furthermore, a study conducted by Cimpian and Erickson (2012) suggested that younger children are more likely to make inferences about categories based on generic versus nongeneric cues, although this has not been extended to inferences based on generic versus nongeneric cues about an individual.

While the current research presents two conflicting views about younger children's responses to failure being more or less likely to be affected by the subtle linguistic cues in person versus process praise and feedback, the significance of person versus process praise on preschool-aged children's responses to failure are not in question. Studies that have directly compared the effects of person and process praise provide consistent support for the proposition that process praise and feedback leads to significantly more mastery-oriented responses to failure in preschool-aged children than person praise and feedback (e.g. Cimpian et al., 2007; Cimpian, 2010; Kamins & Dweck, 1999; Zentall & Morris, 2010). In order to clarify the effects of age on this relationship, more cross-sectional or longitudinal studies of the effects of praise and feedback on responses to failure should be examined. In addition, there has only been one study with a small sample size that compared the effects of process praise plus the suggestion of considering alternative strategies to process praise alone on preschool-aged children's responses to failure. These findings reveal that praise, feedback, and suggestions of considering alternative strategies influence children's responses to failure. Age and gender are two factors that impact these effects.

The Parent-Child Relationship and Young Children's Responses to Failure

Another factor to consider when examining the effects of praise and feedback on young children's responses to failure is the relationship between the provider of the praise or feedback and the recipient of the praise or feedback. This relationship has not yet been taken into account when examining the effects or praise or feedback on young children's responses to failure, but an overview of the current literature suggests that it may serve as a significant moderator. When examining the type of relationship between the provider of the praise or feedback and the recipient of the praise or feedback, different patterns emerge. The most common procedure used in these studies involves having a novel teacher puppet or doll provide the praise or feedback (e.g. Cimpian et al, 2007; Cimpian, 2010; Kamins & Dweck, 1999; Zentall & Morris; 2010). These studies all found significant results when examining the effects of different types of praise and feedback on young children's responses to failure. In contrast, the few correlational studies that have examined the effects of different types of parental praise and feedback on young children's responses to failure found insignificant or weaker relationships than expected (e.g. Gilmore et al., 2009; Kelley et al., 2000; Zentall, 2009). Taken in isolation, these studies suggest that feedback and praise provided by a parent does not have as strong of an influence on young children's responses to failure as praise provided by a novel puppet. An alternative explanation is that the relationship between the parent and child may play a direct role on young children's responses to failure, while also moderating the effects of parental praise and feedback on young children's responses to failure.

From an attachment theory perspective, helpless versus mastery oriented responses to failure are considered in relation to children's internal working models (Zentall, 2009). Based on attachment theory, children develop internal models of themselves and others based on the

relationship with their primary caregiver. If the primary caregiver is responsive and sensitive to the child's needs, then the child develops a secure attachment and his or her internal working models will reflect this healthy relationship. On the other hand, if the primary caregiver is not consistently responsive and sensitive to the child's needs, then the child develops an insecure attachment and his or her internal working models will reflect this maladaptive relationship. Children use these internal working models as a frame of reference for dealing with events in their life.

When facing failure, children's internal working model of themselves could lead them to believe that they are either capable, or incapable, of overcoming the failure. Links between attachment-related constructs and constructs related to young children's responses to failure have been found in a number of studies. Coded observations of maternal sensitivity in infancy were found to be a significant predictor of children's responses to failure in the study conducted by Zentall (2009). Similarly, Arend, Gove, and Sroufe (1979) found attachment security to be a strong predictor of ego-resilience, which was defined as "the ability to respond flexibly, persistently, and resourcefully, especially in problem situations" (Arend et al., 1979, p. 951).

Another study provides weaker support for the connection between attachment and children's responses to failure. In a study conducted by Wang and colleagues (2011), observations of the parent's responsivity, acceptance, organization, learning materials, involvement, and variety when the child was 6 months old, but not 2 years old, were a significant predictor of the child's reported persistence at 3 years of age when controlling for other factors. Surprisingly, these parenting behaviors at 6 months of age were not a significant predictor of the child's reported responses to failure when controlling for other factors, including gender; however, maternal responsivity (the parenting factor most associated with attachment security)

was not examined in isolation from the other constructs, which were not as relevant to the theory. An interesting finding from this study was the large effect that gender had on children's persistence and responses to failure. These studies indicate that attachment security may play a powerful role in the development of mastery or helpless responses to failure, but more research is necessary that directly compares these relationships.

While the influence of attachment security on the effects of parental praise and feedback has not been directly examined, studies have found that children's attachment security is closely tied to children's perceptions of social information in the parent-child relationship (for a review, see Dykas & Cassidy, 2011). Kirsh and Cassidy (1997) found that toddlers with insecure attachments tend to pay less attention to pictures of positive, neutral, and negative parent-child interactions than children with secure attachments. Similarly, Main and colleagues (1985) found kindergartners with insecure-avoidant attachments to avoid looking at a family picture and those with insecure-disorganized attachments to display more disorganized patterns of attention to a family picture. These findings support the hypothesis that children with insecure attachments suppress their attention to attachment-relevant information because of the pain and anxiety associated with their own internal working models of the attachment relationship.

Insecure children's suppression of attachment-relevant information is another finding that has been found by multiple studies (e.g. Johnson, Dweck & Chen, 2007; Johnson et al., 2010). All of these studies were conducted on 12 to 16 month old infants. They found that when the infants were exposed to parent-child scenarios, those with a secure attachment paid closer attention to unresponsive maternal behavior while those with an insecure attachment paid closer attention to responsive maternal behavior. The authors explained these findings by discussing the visual habituation paradigm that shows infants look longer at unexpected events than at

familiar events; however, another explanation is that the insecurely attached children are avoiding and suppressing their attention to parent-child scenarios that are similar to their own internal working models. Another study considering children's selective attention (Belsky, Spritz & Crnic, 1996) found no significant differences between securely and insecurely attached children's levels of distraction from a puppet show by a clicking sound, which indicates that attachment security may affect some dimensions of attention more than others.

Memories of social information have also been linked to attachment security by a number of studies (e.g. Belsky et al., 1996; Kirsh & Cassidy, 1997). Belsky and colleagues (1996) found that children with insecure attachments had more accurate recall of the negative social events portrayed in a puppet show, while children with secure attachments had more accurate recall of the positive social events portrayed in a puppet show. This finding supports the hypothesis that children with insecure attachments perceive negative social information as more salient, thus failing to recall the positive social events. In another study, Kirsh and Cassidy (1997) found that toddlers with secure attachments had more accurate recall of vignettes displaying responsive behavior than insecure-avoidant children and more accurate recall of vignettes displaying rejecting stories than insecure-ambivalent children. This finding supports the hypothesis that children with insecure attachments suppress memories of attachment-relevant information.

Other studies have revealed weaker relationships between attachment security and attributions. Ziv, Oppenheim and Sagi-Schwartz (2004) found attachment security to be unrelated to 7 year-old children's recall accuracy and attention to videotaped mother-child and peer interactions. These findings are puzzling, especially since attachment security has been associated with poorer attention and recall of attachment-relevant information in adults (e.g. Dewitte et al., 2007; Edelstein, 2006) as well as the studies of younger children discussed above.

Dykas and Cassidy (2011) raise the possibility that the unstructured nature of the measures of memory and attention used in Ziv and colleagues' (2004) study led to the insignificant results. Even though this study found insignificant differences based on attention and memory, they did find insecurely attached children to be significantly more likely to attribute ambiguous peer and parental social behavior as having negative motives. Similar connections between insecure attachment and attributions of ambiguous social behavior to negative motives have also been found in another study of 5 year-olds conducted by Suess and colleagues (1992); however, several studies (Cassidy et al., 1996; Raikes & Thompson, 2008) found that attachment security did not predict hostile attributions of ambiguous social behavior in preschool-age children like it did in older children.

Few studies have examined how attachment security affects attributions of control. Only one study (Hortacsu, 1994) which was conducted on fourth graders, found that children with insecure attachments had a more external locus of control while those with secure attachments had a more internal locus of control. Several studies (Leondari & Kiosseoglou, 2002; Mickelson, Kessler & Shaver, 1997; Torquati & Vazsonyi, 1999) examined the relationship between attachment security and attributions of control in adolescents and adults and found similar patterns of attachment security correlating with a more internal locus of control and attachment insecurity correlating with a more external locus of control.

Cumulatively, these studies indicate that insecurely attached children are more likely than securely attached children to suppress their attention to attachment-relevant information, and when paying attention to such information, they pay more attention to responsive maternal information due to its unexpected nature, or to suppress the insecure nature of their attachment. Yet attachment security does not play a significant role on children's ability to be distracted by

certain cues, such as clicking sounds. In addition, these studies reveal a pattern of children with insecure attachments having more accurate recall of negative social information and poorer recall of positive social information and attachment-relevant information than securely attached children. Older children with insecure attachments are more likely to attribute ambiguous social information to negative or hostile motives, but this does was not found with younger children. Lastly, studies have found that children with insecure attachments were more likely to have an external locus of control, but this relationship has not yet been examined in young children.

A major criticism of attachment theory has been voiced by temperament theorists, who argue that the factors regulating the expression of affect are better accounted for by the intrinsic traits of the child than by his or her attachment security to the primary caregiver (e.g. Chess & Thomas, 1982). A study conducted by Vaughn and colleagues (1992) did show significant correlations between measures of temperament and attachment security; however, they argued that both theories provide valuable and unique insights. As they stated:

In our view, these data provide a sufficient rationale for abandoning positions that conceptualize attachment and temperament in ways that force them into qualitatively different psychological regions or behavioral domains. Instead, we prefer to characterize the behavioral domains governed by temperament and attachment concepts as falling along a bipolar continuum of assessment possibilities that ranges, at one extreme, from assessments capturing variability that is primarily intrinsic to the person to, at the opposite extreme, measures capturing only relationship variability (Stevenson-Hinde, 1988). (Vaughn et al., 1992, p. 471)

This view recognizes the importance and contribution of each perspective. Temperament theory provides an understanding of the innate temperamental patterns that influence children's

development and interactions with others. Attachment theory provides an understanding of the relationship between a child and the primary caregiver. To consider the unique effects of parental praise on mastery-oriented responses to failure, the attachment theory is a fitting framework to consider the role of the parent-child relationship as opposed to considering the role of innate and uncontrollable factors within the child. However, due to the overlap between the two constructs and the unique contributions of temperament theory, it is important to consider whether temperament can better explain the relationship between parental praise and young children's responses to failure.

Current Study

Considering the state of the present literature, there are many implications for the current study. The current literature suggests that young children can display helpless or masteryoriented responses to failure and that subtle differences in feedback and praise can influence these responses. Process praise plus the suggestion of considering alternative strategies could be more advantageous to young children's responses to failure than process praise alone; however, research that directly compares the effects of these two strategies on young children's responses to failure has not been conducted with a large sample. The literature also indicates that it is important to consider the effects of the age and gender of the recipient of praise when examining the relationship between process praise plus the suggestion of considering alternative strategies on children's responses to failure. The implications of potential gender effects are that there may be certain populations for whom praise plus the suggestion of considering alternative strategies should not be used. The potential moderating influence of attachment security on the effects of different types of praise and feedback on young children's responses to failure. It also has potential

implications for strategies to promote mastery-oriented responses to failure in other contexts, such as the classroom, since attachment security has also been found to influence social cognitions outside of the parent-child relationship.

CHAPTER 3 – METHOD

Participants

The population of interest includes male and female 4-5 year old children and their mothers. Mothers are the parent of interest in this study because the majority of attachment theory research examines children's attachments to their mothers. This also controls for any differences in children's perception of praise due to the gender of the parent providing the praise. Mothers were recruited from two childcare programs and one university-run preschool. Fiftyfour mother-child dyads comprised of 31 male children and 23 female children participated in the study. Of the 54 dyads, 53 mothers (31 had male children, 22 had female children) completed all of the questionnaires required for the correlational study while 47 children (28 male children, 20 female children) completed both of the puppet praise conditions. The six children who did not complete the puppet praise conditions appeared anxious and their participation on the task was discontinued. One child gave verbal assent to participate, but then refused to answer any verbal questions. Five children refused to give verbal assent. The race of the majority of the mothers was White, not of Hispanic origin (75.4%) followed by, Asian/Pacific Islander (13.2%), multiracial (7.5%), and Hispanic (3.8%). The mothers had a range of educational levels with 39.6% of the mothers reported being college graduates, 26.4% reported completing some college education, 22.6% indicated obtaining a graduate degree (M.A., M.B.A.), 5.7% reported having a professional degree (Ph.D, M.D., J.D.), and 5.7% reported graduating from high school graduate as their highest educational level.

The demographics of the participants can also be understood in terms of the context from which the sample was drawn. U.S. Census Bureau statistics (2014) for the county of the three recruitment sites revealed that 83.8% of the population is White alone, not Hispanic or Latino,

11.0% are Hispanic or Latino, 2.3% are two or more races, 1.6% are Asian alone, 0.8% are American Indian and Alaska Native alone, 0.8% are Native Hawaiian and Other Pacific Islander alone, and 0.7% are Black or African American alone. In addition, 93.6% of the population over the age of 24 have graduated from high school or higher while 35.7% have obtained a Bachelor's degree or higher. In addition, 81.2% of the residents of the county were identified as members of the Church of Jesus Christ of Latter-Day Saints (LDS) in 2011 (Canham, 2012).

A power analysis (using G*Power 3.1.3 software) for multiple linear regression with a power of .8, an effect size of .25, 7 predictors (i.e., gender, neutral statement, person praise, process praise, process praise plus the suggestion of considering alternative strategies, attachment insecurity, negative affect), and an alpha error probability of .05, revealed a minimum sample size of 34. A power analysis for the MANOVA within-factors analyses with a power of .8, an effect size of .25, an alpha error probability of .05, 2 measurements, 2 groups, and a correlation between the measures of .4, revealed a required sample size of 40. Using R software, a post-hoc power analysis for a Spearman's rho analysis with a sample of 53, an alpha error probability of .05, and the means and standard deviations of each variable measured (negative responses to failure scale, attachment insecurity scale, negative affect scale, use of person praise, use of process praise, use of neutral statements, and use of process praise plus the suggestion of considering alternative strategies, gender) led to a power of .79. A post-hoc power analysis for a Friedman analysis with a sample of 47, an error probability of .05, an effect size of .25, two measurements, and a correlation of .581 led to a power of .61. In appreciation of their participation, mothers received a \$20 gift certificate to a store, and the children received two animal finger puppets for each of the two separate puppet procedures, for a total of four animal finger puppets.

Research Design

The study utilized two different research designs. One design is correlational, examining the relation between 53 mothers' reported use of praise and strategy feedback and the mothers' reports of the children's responses to failure. In addition, the mothers' beliefs about the effects of praise and strategy feedback were examined in relation to their beliefs about the other praise dimensions. Several studies have used a similar correlational design to examine the relationships between measures of maternal praise and children's responses to failure (e.g. Gilmore et al., 2009; Kelley et al., 2000; Zentall, 2009).

A within-subjects design was used to assess the effects of the type of praise on children's mastery-orientation. This design entailed the use of an analogue behavioral observation method with each child exposed to both praise conditions. The analogue behavioral observation method used an adapted version of a script developed by Cimpian, Arce, Markman, & Dweck (2007). This procedure is similar to those developed and used in a number of studies (e.g. Kamins & Dweck, 1999; Zentall & Morris, 2010) that examined the effects of person versus process praise on 4-5 year old children's responses to failure. While it involves acting out scenarios as opposed to the children engaging in the actual activity, this allows for exposure to multiple failures without experiencing high levels of personal distress. It also allows for the provision of praise and pointing out errors without it appearing as contrived, as could be the case if the child were actually engaging in the activity.

47 4-5 year-old children acted out vignettes under two different praise conditions. Each praise condition involved having the child use an animal puppet to act out four vignettes (see Appendix A) following a script (Cimpian et al., 2007). A female research assistant used a mother animal puppet to respond to the child's successes with verbal feedback. In one condition,

the mother puppet responded to the four vignettes with process praise (e.g. "I can tell you worked really hard on the drawing."). In the second condition, the mother puppet responded to the four vignettes with process praise plus the suggestion of considering alternative strategies (e.g. "I can tell you worked really hard on the drawing; can you think of other ways to draw a tree?").

For both praise conditions, the child verbally responded to questions assessing the child's affect towards the drawing and his or her attributions for success. The child also acted out two failure vignettes after each praise condition. Both of these failure vignettes involved the child using the puppet to pretend to draw an object and the puppet realizing that they forgot an important feature of the object. Following the two failure vignettes, the child verbally responded to questions using the script (see Appendix A). These questions assessed the child's mastery motivation by examining persistence, affect, motivation, and attributions. Finally, the child acted out two resolution vignettes that involved successfully fixing the mistakes they made to resolve any negative feelings. Both praise conditions, in combination with the accompanying questions and failure and resolution vignettes, took approximately 20 minutes to complete. The two conditions were presented in random order to each child during two separate meetings approximately one week apart. The entire procedure was conducted over approximately one week and involved approximately 40 minutes of the child's time.

An important distinction of the current study is that the within-subject design diminished the problem of non-equivalent groups. Past studies used this script in a between-subjects design so that each child was exposed to only one praise condition. An advantage of utilizing a withinsubjects design is that any observed differences were not due to differences between the participants because each participant was exposed to each condition (Gliner, Morgan, George &

Harmon, 2002). In addition, a within-subjects design was more feasible due to the ability to obtain greater power with a smaller sample. Order effects were accounted for by presenting the conditions in random order, and carryover effects were minimized by presenting the conditions approximately one week apart. There were also adaptations that were made to the original script developed by Cimpian and colleagues (2007). One adaptation is the use of a mother puppet to provide the praise as opposed to a novel teacher. This was done to be able to examine praise in the context of a parent-child relationship. The script was also adapted by replacing the "person praise" condition with the "process praise plus the suggestion of considering alternative strategies" condition.

The moderating variables of attachment security and gender were considered in both research designs. These variables were measured based on maternal surveys. Parents' perceptions of the child's attachment security were measured by the Parent/Child Reunion Inventory. In addition, a maternal survey measure of the child's temperament was administered to rule out temperament as an additional moderator.

Variables and Instruments

Background Questionnaire (BQ).

To determine whether the mother-child dyad met the inclusion criteria for completing the study and to determine the child's gender, a Background Questionnaire (BQ) was completed by the mother. The BQ, which, was developed for this study, took approximately 5 minutes to complete and is found in Appendix B. The BQ consists of five open-ended and seven forced-choice questions. These questions ask for the parent and the child's names and address, the child's gender and age, whether the mother is the primary caregiver and has the ability to

complete the required questionnaires, and whether the child has the ability to complete the required puppet shows and answer the related questions.

Maternal Praise Survey (MPS).

The Maternal Praise Survey (MPS) is an adaptation of a survey developed by Henderlong (2001) to measure the mother's use of, and beliefs about, different dimensions of praise. The MPS, found in Appendix C, took approximately 10 minutes to complete, and can be administered to mothers of any age. It consists of one gender-specific vignette, followed by one open ended question and 15 Likert scale questions. The vignette reads as follows:

Ethan/Emma is 4 years old and attends preschool. Ethan/Emma enjoys school and tends to do fairly well. One day, Ethan/Emma was working on some wooden jigsaw puzzles that his/her mother had given him. The puzzles were interesting and he/she was able to finish two of them fairly quickly, though he/she wasn't sure how long it would take most children to complete them. When Ethan/Emma's mother walked into the room she stopped at the table where Ethan/Emma was working.

This vignette was followed by one open ended question assessing how the parent would respond ("What would YOU say to Ethan/Emma if you were his/her mother?"). The response to this question was coded by two independent raters as no praise, person praise, product praise, process praise plus the suggestion of considering alternative strategies, or some combination of different forms of praise. Henderlong (2001) used a similar coding procedure and found 89% inter-rater reliability. The two raters were trained by coding sample responses and then discussing any discrepancies. Any disagreements were settled through discussion. Next, mothers evaluated four possible ways to respond to the vignette: 1) a neutral statement ("Okay. You're done playing with the puzzles."), 2) person praise ("Wow! That's really good.

You must be good at puzzles!"), 3) process praise ("Wow! That's really good. You must have been really thinking!"), and 4) process praise plus the suggestion of considering alternative strategies ("Wow! That's really good. You must have been really thinking! Can you think of another way to solve the puzzles?"). Each of the four responses was followed by three Likert scale questions. One Likert scale question assessed the parent's likelihood of using the statement on a scale from 1 (NOT very likely) to 7 (very likely). The second Likert scale question assessed the parent's beliefs about the effects of the statement on the child's motivation on a scale from 1 (will make Ethan/Emma LESS interested in puzzles) to 7 (will make Ethan/Emma MORE interested in puzzles). Lastly, the parent's beliefs about the effects of the statement on the child's preparation to face future setbacks is assessed on a scale from 1 (does NOT prepare Ethan/Emma well) to 7 (prepares Ethan/Emma well).

One adaptation that was made to the original survey developed by Henderlong (2001) involved basing the vignette on an interaction between a mother and child as opposed to an interaction between a teacher and a child. The MPS also contained *a process praise plus the suggestion of considering alternative strategies* statement in addition to the *neutral* statement and *person* and *process* praise statements that were in the original survey. The Likert scale question assessing the parent's likelihood to use each statement was also added to the MPS to provide another measure of parent's use of praise in combination with the open-ended question. Questions in Henderlong's survey that were unrelated to this study were omitted from the survey. The order of the questions in the survey was also changed. In the MPS, the open-ended question was asked first to eliminate the possibility that exposure to the five statements would influence responses.

Responses to Failure: Dimensions of Mastery Questionnaire (DMQ).

For the correlational study, young children's responses to failure were measured by mothers' responses on the Dimensions of Mastery Questionnaire (DMQ) - Negative Reactions to Failure Scale (Morgan et al., 2009). This questionnaire was developed to measure mastery motivation, while the Negative Reactions to Failure Scale was specifically developed to examine children's expressive aspects of mastery motivation after experiencing failure.

The Negative Reactions to Failure Scale is a subscale of the DMQ and consists of five items rated on a 5 point Likert scale, from 1 (not at all typical) to 5 (very typical). The entire DMQ took approximately 10 minutes to complete. A sample item is: "Looks down or away when he or she tries but cannot do something." The parent ratings of the Negative Reactions to Failure Scale have been found to have adequate internal consistency (alpha = .75) for 4-6 year old children (Morgan et al., 2009, p. 65). As predicted, there were negative correlations between parent ratings on the preschool version of the Negative Reactions to Failure Scale and the other six scales (r = -.13 to -.57). Test-retest reliability of the preschool version of the Negative Reactions to Failure Scale after a one month interval was .68 when completed by a preschool teacher. The DMQ has been used by a number of studies (e.g. see Morgan et al., 2009, p. 31-39 for a comprehensive list) and is considered a valid measure of a child's mastery motivation.

Parent/Child Reunion Inventory (PCRI).

The Parent/Child Reunion Inventory (PCRI) was used to measure the child's attachment security from the mother's perspective (Marcus, 1990. The PCRI consists of 20 3-point Likert scale items that describe possible ways the child may behave after a separation from the parent and range from 0 (never) to 2 (usually). The PCRI took approximately 10 minutes to complete. Six items form a secure attachment sub-scale while 14 items form an insecure attachment sub-

scale. It requires substantially less time and training than measures such as the strange situation paradigm and it can be given to parents of children aged 3-11.

The PCRI demonstrated adequate criterion validity based on significant (p < .05) correlations to ratings of physical affection of foster children (.48), the California Preschool Social Competence Scale (.41), the Preschool Behavior Questionnaire (-.51), the Pettit-Dodge Aggression Scale (-.26) and ratings of internalizing (-.35), externalizing (-.53), and achievement (-.53) problems on the CBCL (Marcus, 1990). The Cronbach alphas have also been demonstrated to be adequate for both the secure attachment (.76) and the insecure attachment (.77) scales. An examination of the factor structure of the PCRI conducted by Marcus (1997) revealed categories that approximated those found by more intensive observational methods, such as the Main and Cassidy observation system. A comparison of maternal and paternal ratings of the PCRI found significant correlations (r=.49, p<.001). In order to control for the type of separation that mothers referenced, the PCRI instruction was modified directing mothers to consider their most recent separation from their child: "Think back to the most recent time that you picked your child up from childcare or school."

Children's Behavior Questionnaire: Very Short Form, Negative Affect Scale.

The Negative Affect Scale of the Children's Behavior Questionnaire-Very Short Form (CBQ-VSF) measured the young children's temperament in this study. The CBQ-VSF is a parental survey that was developed by Putnam and Rothbart (2006) to serve as a brief measure of temperament for children aged 3-8. It consists of 36 items that are rated on a 7 point Likert scale, from 1 (extremely untrue of your child) to 7 (extremely true of your child). These items are divided into three 12-item scales: Surgency, Negative Affect, and Effortful Control. Negative Affect was the only scale used for the current study due to the high degree of

conceptual overlap in the Surgency and Effortful Control scales and attachment security. A sample item from the Negative Affect scale is: "When angry about something, s/he tends to stay upset for ten minutes or longer." An examination of the inter-rater reliability between mother and father for the Negative Affect scale of the CBQ-VSF revealed correlations of .36 at 33 months and .52 at 46 months. An analysis of the 12 month test-retest reliability of the Negative Affect scale revealed a correlation of .70 based on maternal ratings and a correlation of .61 for paternal ratings. The Negative Affect scale demonstrated adequate internal consistency across three different samples ($\alpha = .66$, .70, .67). When allowing for error terms in the same scale to correlate, the fit of the CBQ-VSF factor structure was adequate based on maximum likelihood confirmatory factor analysis (comparative fit index = .98, Tucker-Lewis index = .98, root mean square error of approximation= .053, = .050 to .056). As was expected, there were small but significant correlations between Surgency and Effortful Control (r = -.19, p < .01) and Surgency and Negative Affect (r = -.08, p < .05), but not Negative Affect and Effortful Control.

Child's Verbal Responses after Acting out Failure Vignettes.

Using a quasi-experimental within-subjects design, young children's responses to failure were measured after they used a puppet to act out two failure scenarios. Following these two scenarios, the children's task persistence, intrinsic motivation to continue the task, affect towards the task, and attributions for failure on the task were measured with 12 questions posed by the research assistant. The children's task persistence was measured based on their oral responses to the following forced choice questions:

Think about the story where you drew a cat and forgot the ears. What would you do now? Would you keep working on the drawing of the cat or would you do something else?

Think about the story where you drew a bus and forgot the wheels. What would you do now? Would you keep working on the drawing of the bus or would you do something else?

These responses were coded by the research assistants as *mastery-oriented* if they chose to keep working on the drawing with the mistake, or as *helpless* if they chose to do something else. The children's intrinsic motivation to continue the task was measured by their oral responses to the following forced choice questions:

On another day, when you had a chance to draw one of these again, would you want to draw the bus, want to draw the tree, or want to draw the cat? If you had a chance to do something tomorrow, would you draw or would you do something else?

The children's affect towards the task was measured by their oral responses to the following forced choice questions, coded on two 6-point Likert scales:

Do you like the cat that you drew or do you not like it? How much do you like/not like it? Do you SORT OF like/not like it, do you like/not like it, or do you REALLY like/not like it? Did what happened in the cat story where you forgot the ears make you feel happy or sad? How happy/sad? Were you SORT OF happy/sad, happy/sad, or REALLY happy/sad?

Lastly, the children's attributions of failure to ability and to contingent self-worth were measured based on their oral responses to the following forced choice questions:

Did everything that happened in the cat story where you forgot the ears make you feel like you were good at drawing or not good at drawing? Did everything that happened in the cat story where you forgot the ears make you feel like you were a good boy/girl or not a good boy/girl?

As previously noted, in combination with the random assignment of praise conditions discussed above, this method of examining 4-5 year olds' responses to failure has been developed and used in a number of different studies (e.g. Cimpian et al., 2007; Kamins & Dweck, 1999; Zentall & Morris, 2010), and has advantages over the child's actual engagement in a task, especially for a within-subjects design. Kamins and Dweck (1999) found similar responses to failure vignettes to have significant correlations between attribution questions and affect questions (r = .57, p < .01), as well as attribution questions and persistence questions (r = .68, p < .01). All other comparisons of indicators of response to failure yielded insignificant correlations.

Procedure

The procedure for this study entailed recruiting children and their mothers from two childcare programs and a University-run preschool. Each of these sites provided services to 4-5 year old children, provided a room where the research assistants can complete the puppet script, and agreed to allow the research assistants to work with the participating 4-5 year old children for 20 minutes on two separate occasions that were at least one week apart. Three undergraduate students were recruited to assist in the study using a listserve of undergraduate students from a local university who were looking for research opportunities. The research assistants were selected from the pool of applicants based on coursework demonstrating an understanding of basic psychological principles, research experience, and experience working with young children. In addition, the research assistants working directly with the preschool children had to be female since they were acting out the part of the mother in the puppet vignettes. From the pool of applicants, two female research assistants were chosen to work directly with the children while one male research assistant with experience using puppets was chosen to record data, code

data, and help train the female research assistants. These research assistants completed MSU Institutional Review Board (IRB) training as well as training in the study recruitment and data collection procedures. A research assistant met with mothers at the sites to inform them about the study, using the informed consent form as a guide. Interested mothers then completed the Background Questionnaire and informed consent and parental permission forms (see Appendices D and E). At least 20 children of each gender were recruited. Dyads in which the mother was not the primary caregiver were excluded from this study. In addition, mothers who could not read or write, children who had difficulties with attention or articulating or understanding language, and dyads for whom English was a second language were excluded from the study. If the mother-child dyad was eligible, the surveys, which included the MPS, DMQ, PCRI and CBQ-VSF, were sent home with the mother. The mothers returned the completed surveys to the experimenter in a pre-addressed and stamped envelope that was sent home with the measures. All data were stored in a locked cabinet in the researcher's office. All identifying information was replaced with an anonymous identification code and stored on a password-protected computer. De-identified codes were used to enter and analyze the data in order to ensure confidentiality.

After the questionnaires were returned to the experimenter, the primary researcher and two research assistants scheduled the two data collection sessions one week apart with the participating child. Each session began by reading the verbal assent script (see Appendix F) and only continued if the child provided verbal assent to participate. Both of the 20 minute sessions included a praise condition (given in random order), where the child chose a puppet of the same gender to act out four vignettes that involved the puppet drawing while a mother puppet, played

by the participating research assistant, provided process praise or process praise plus the suggestion of considering alternative strategies.

The puppet was asked to draw a specific object and pretended to draw it on a blank piece of paper with a pipe cleaner. These four vignettes were followed in each session by two failure vignettes that involved the mother puppet mentioning that something was missing from a drawing and a picture, with the mistake being described. Next, the researcher asked questions about this "failure" that assessed the child's persistence, intrinsic motivation, affect, and attributions for failure. The sessions ended with two resolution vignettes that allowed the child to fix the puppet's mistakes to ensure that the participant was not upset by the procedure. Upon completion of each session, as a token of appreciation, the child chose two animal finger puppets. At the conclusion of the study, the mother received a \$20 gift card in the mail as compensation.

CHAPTER 4 – RESULTS

Data Analysis

The first step consisted of scoring each measure. This included coding the open ended MPS question (i.e. "What would YOU say to Ethan/Emma if you were his/her mother?") as no praise, person praise, product praise, process praise, process praise plus the consideration of alternative strategies, or a combination of different forms of praise. The data were then entered into an SPSS database. Reliability of the measures was calculated and normality of the variables was tested.

Internal consistency for the Parent Child Reunion Inventory Attachment Insecurity scale $(\alpha = .721)$, Motivation Questionnaire Negative Response to Failure scale ($\alpha = .805$), and the Child Behavior Questionnaire Negative Affect scale ($\alpha = .730$) were all in the acceptable range. Interrater reliability for 53 responses on the open-ended question of the Maternal Praise Survey was moderate (Kappa = .528, p < .001). This low reliability is believed to be due to the long and complex nature of the typical responses of parents. For example, one parent commented: "Wow! Look at that Emma! You did two puzzles already? That's so great! Good job cutie pie! Are you going to do some more? Do you need any help?" This response contains vague praise (e.g. "Wow"), process praise (e.g. "Good job"), person praise (e.g. "cutie pie"), and several questions that provide the child with choices (e.g. "Are you going to do some more?"), but are not suggestions of considering alternative strategies. Due to the low reliability of the open ended question and due to the lack of responses in the coded categories (e.g. no or very few responses coded as process praise plus the suggestion of considering alternative strategies, product praise, no praise), the statistical analyses were based solely on the Maternal Praise Survey Likert scale questions assessing the use of different forms of praise. Still, the complex and multidimensional

nature of the parent responses to the open-ended question raise some interesting questions about typical spontaneous parental praise statements.

The Shapiro-Wilk test revealed that the Child Behavior Questionnaire Negative Affect scale (p = .127) and Motivation Questionnaire Negative Response to Failure scale (p = .109) met the assumptions of a normal distribution. The Parent-Child Relationship Inventory Attachment Security scale did not meet the assumption of a normal distribution (p < .001). Fifty eight percent of the respondents received the highest score possible (12 out of 12) on the scale, which did not allow for variability across participants and led to a high level of skew (-2.124) and kurtosis (5.952).

For this reason, the Parent-Child Relationship Inventory Attachment Insecurity scale was used instead. This scale had significantly less skew (.594) and kurtosis (-.531) and greater variance of scores. Still, the Attachment Insecurity scale did not meet the assumption of normality using the Shapiro-Wilk test, even after performing transformations (p = .017). In addition, parent ratings of use of process praise, person praise, neutral statements, and process praise plus the consideration of alternative strategies were not normally distributed variables. Also, when considering variance and distribution of the responses to the puppet vignettes as well, it became apparent that these variables did not meet the assumptions of normality even after performing transformations.

After completing these initial analyses, the research questions were addressed.

Research Question 1: How does parental process praise plus the suggestion of an alternative strategy affect young children's mastery-oriented responses to failure compared to parental process praise alone?

This question was analyzed by conducting two statistical analyses. The first planned analysis was a hierarchical multiple regression; however, due to the lack of normal distributions in the attachment insecurity and parent's reported use of praise variables as described above, this analysis was replaced with Spearman's Rho correlational analyses. First, the data were recoded based on rank from 1 to 54. If more than one data point shared the same value, the ranks were summed and divided by the number of shared values. Spearman's Rho correlational analyses revealed weak and non-significant (p > .05) correlations between the Motivation Questionnaire Negative Response to Failure scale and the mothers' reported use of neutral statements (r =.030), person praise (r = -.089), process praise (r = -.085), and process praise plus the suggestion of considering alternative strategies (r = -.038). This indicates that children's responses to failure were not correlated with parents' praise or feedback of any kind. Similarly, gender was not related (r = -.204, p = .143) to their response to failure. Reported attachment insecurity was significantly (p = .005) and moderately (r = .377) correlated to the children's reported negative responses to failure such that the more insecure the attachment, the more negative the child's responses to failure (see Figure 1). Reported negative affect of the children was also significantly (p < .001) and strongly (r = .475) correlated to the children's negative responses to failure such that the more negative the child's affect, the more negative their responses to failure (see Figure 2). The Spearman's rho correlation between the attachment insecurity scale and negative affect scale was not significant (p = .246) and weak (r = .161), indicating that both of these variables have a unique relationship to the negative response to failure scale.

The second planned analysis consisted of a MANOVA; however after the initial data analysis it became apparent that MANOVA was not appropriate for several reasons. First, a MANOVA was not appropriate due to the lack of normal distributions in the attachment

insecurity and children's responses to failure scenario variables as described above. Second, a MANOVA was not appropriate due to the lack of relation between the dependent variables. Spearman's rho correlational analyses revealed that after making a mistake, the young children's affect and attributions were significantly (p < .01) and strongly correlated (r = .643) while their motivation and persistence were significantly (p < .01), but weakly correlated (r = .269). However, the young children's affect and attributions were not significantly correlated to either motivation or persistence (p > .05). For these reasons, the MANOVA was replaced with Friedman and Spearman's Rho correlational analyses.

Friedman tests revealed no significant differences across condition (process praise, process praise plus the suggestion of considering alternative strategies) in the distributions of affect (chi square = .000, p = 1.000), attributions (chi square = 2.333, p = .127), motivation (chi square = .200, p = .655), and persistence (chi square = .600, p = .439; see Figure 3). Spearman's Rho correlational analyses do not allow for mixed model analyses of between and within-subject variables at the same time, so independent analyses of affect, attribution, motivation, and persistence were conducted for the two separate conditions. The analyses revealed that there were no significant correlations between gender and any of the outcome variables (affect, attributions, motivation, or persistence) in either of the conditions (see Figure 4). There were also no significant correlations between the Negative Affect scale of temperament and the children's affect, attributions, or motivation, in response to failure in either condition. There was a significant negative correlation (p = .024, r = -.328) between the Negative Affect scale and the child's persistence in response to failure in the process praise condition, but not in the process praise plus the consideration of alternative strategies condition (see Figure 5). Spearman's Rho correlational analyses also revealed no significant correlations between the Parent Child Reunion Inventory Attachment Insecurity scale and the child's affect, motivation, or persistence in response to failure in either of the conditions (see Figure 6). There were also no significant correlations between children's attributions in response to failure and the Attachment Insecurity scale in the process praise only condition; however there were significant negative correlations between children's attributions and the Attachment Insecurity scale in the process praise plus the Attachment Insecurity scale in the process praise plus the Attachment Insecurity scale in the process praise plus the Attachment Insecurity scale in the process praise plus the suggestion of considering alternatives strategies condition (p = .034, r = -.309; see Figure 7).

Research Question 2: Do parents' perceptions of their children's attachment security moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

Due to the lack of a normal distribution across the attachment insecurity, parent's reported use of praise, and children's responses to failure scenario variables, a new plan for considering the moderating effect of attachment insecurity was developed. There are no widely accepted methods for considering moderator variables in nonparametric analyses; therefore, the first step was to sort the participants into low, medium, and high attachment insecurity groups. This was done by sorting them into groups of one or more standard deviations below the mean, less than one standard deviation below or above the mean, and one or more standard deviations above the mean, as recommended by Cohen and Cohen (2003). Next, these groups were considered graphically to see if there was a pattern that indicated that attachment insecurity serves as a moderator. Next, parametric analyses (multiple linear regression, repeated measures ANOVA) were conducted. While the interpretation of these analyses are limited since several variables violated the assumption of normality, they were still completed to provide some statistical approximation of the likelihood of attachment insecurity being a moderating variable if the variables had met the assumption of being normally distributed. Graphs of the data from the

correlational design revealed no clear moderating effect of attachment insecurity group on the mean negative response to failure across the use of process praise plus the consideration of alternative strategies (see Figure 8). Multiple linear regression revealed that interaction terms between reported attachment insecurity and the mother's reported use of neutral statements, person praise, process praise, and process praise plus the suggestion of considering alternative strategies were all non-significant (p > .05) predictors of the children's reported negative responses to failure.

Graphing the moderating effects of attachment security based on the within-subjects design revealed a lower mean affect (i.e. feeling good about one's work) and mean attribution (i.e. separating self-worth and ability from performance) of the process praise plus the consideration of alternative strategies condition compared to the process praise condition in the high attachment insecurity group. For the low attachment insecurity group, the graphs revealed a pattern of mean affect and attribution remaining steady or being greater in the process praise plus the consideration of alternative strategies condition compared to the process praise condition (see Figures 9 and 10). The same pattern was not found for motivation and persistence, which revealed that the low attachment insecurity group (more secure) had a higher mean motivation and mean persistence in the process praise condition than in the process praise plus the suggestion of considering alternative strategies condition. The high attachment insecurity group (less secure) had a mean motivation and mean persistence that remained fairly steady across the process praise and process praise plus the suggestion of considering alternative strategies conditions (see Figures 11-12). Repeated measures ANOVAs revealed that attachment insecurity did not serve as a significant moderator (p > .05) between the condition and the children's affect, attributions, motivation, or persistence after experiencing failure.

Research Question 3: Does the child's gender moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

Graphs of the data from the correlational design revealed no clear moderating pattern of mean negative response to failure across the use of process praise plus the consideration of alternative strategies across the groups of males and females (see Figure 13). Multiple linear regression revealed that interaction terms between gender and the mother's reported use of neutral statements, person praise, process praise, and process praise plus the suggestion of considering alternative strategies were all non-significant (p > .05) predictors of the children's reported negative responses to failure. Graphs of the data from the within-subjects design revealed no clear moderating pattern of mean affect, attributions, or motivation across the parental praise condition across the groups of males and females (see Figures 14-16). The graphs did reveal a clear pattern of mean persistence decreasing from the process praise condition to the process praise plus the consideration of alternative strategies condition for males and mean persistence increasing from the process praise condition to the process praise plus the consideration of alternative strategies for females (see Figure 17). Repeated measures ANOVAs revealed that gender was not a significant moderator (p > .05) between the condition and the children's affect, attributions, motivation, or persistence after experiencing failure.

Research Question 4: What do parents believe about the effects of parental process praise and parental process praise plus the suggestion of considering alternative strategies on children's mastery-oriented responses to failure?

Due to the parental belief variables from the MPS violating the assumption of a normal distribution, Friedman and Wilcoxon signed ranks tests were conducted. A Friedman analysis revealed that the differences in variance between the mothers' beliefs about the motivation of the

different statements were significant (p < .01). To follow up, six Wilcoxon signed ranks tests were conducted on mothers' beliefs in the motivational effects between pairs of each of the four possible statements. These tests revealed that there were significant differences (p < .01) between parents' beliefs in the motivational effects of neutral statements versus person praise, neutral statements versus process praise, and neutral statements versus process praise plus the consideration of alternative strategies. There were no significant differences (p > .05) between beliefs in motivational effects of person versus process praise, person versus process praise plus the consideration of alternative strategies, or process praise versus process praise plus the consideration of alternative strategies. A plotline of the means across the categories (see Figure 18) clearly shows that the mean belief about the motivational effects of neutral statements is far lower than the mean belief about the motivational effects of the other three statements.

A second Friedman analysis revealed significant differences in mothers' beliefs about the response to failure effects of the different statements (p < .01). To follow up, six Wilcoxon signed ranks tests were conducted on mothers' beliefs in the response to failure effects between pairs of each of the four possible statements. The Wilcoxon signed rank tests revealed that there were significant differences (p < .01) in mothers' beliefs in the response to failure effects of each of the six pairs. A plotline of the means across the categories (see Figure 19) clearly shows a pattern where the mean beliefs about the response to failure effects of neutral statements is the lowest, followed by person praise, followed by process praise, followed by process praise plus the consideration of alternative strategies.

These findings revealed differences between mothers' perceptions of the response to failure effects of different statements and the relationship between these statements and children's responses to failure based on a puppet's mistake and based on parent report. Mothers

believed process praise plus the consideration of alternative strategies would have the most positive effect on young children's responses to failure, followed by process praise alone, then person praise, then neutral statements; however, the actual relationship between different types of praise and young children's responses to failure was insignificant across both study designs.

CHAPTER 5 – DISCUSSION

Discussion

One purpose of this study was to compare the effects of parental process praise and parental process praise plus the suggestion of considering alternative strategies on young children's motivational response to failure. Additionally, this study explored whether gender and the attachment of the young children to their primary caregivers moderated the effects of parental praise (process praise versus process praise plus the suggestion of an alternative strategy) on children's response to failure. Survey data were collected from 54 mothers to assess their use of praise and strategy feedback at home, to measure their perception of the child's attachment security to the mother, and to assess the child's responses to failure. In addition, the children participated, in random order, in two different praise conditions (i.e., process praise, process praise plus the suggestion of considering alternative strategies) and their responses to failure scenarios were measured using puppets. The findings of the current study are discussed in relation to each of the research questions:

Research Question 1: How does parental process praise plus the suggestion of an alternative strategy affect young children's mastery-oriented responses to failure compared to parental process praise alone?

Based on an attribution theory framework, it was hypothesized that process praise plus the suggestion of considering alternative strategies would lead to more mastery-oriented responses to failure compared to process praise alone. Contrary to the hypothesis, there were no significant effects on young children's responses to failure when comparing process praise to process praise plus the consideration of alternative strategies. This finding was consistent across two different analyses. First, when comparing exposure to process praise plus the suggestion of

alternative strategies to process praise alone from a mother puppet, there were no significant differences in young children's affect, attributions, motivation, and persistence after their puppet made a mistake. Second, when comparing mothers' reported use of neutral statements, person praise, process praise, and process praise plus the consideration of alternative strategies to young children's responses to failure in the home, there were no significant correlations. These findings indicated that process praise plus the suggestion of considering alternative strategies did not have an immediate beneficial or detrimental effect on young children's responses to failure compared to process praise alone. This suggests that children who are exposed to process praise, as well as children who are exposed to process praise plus the suggestion of considering alternative strategies, would be equally likely to display mastery-oriented responses to failure. It is still possible that process praise plus the suggestion of considering alternative strategies has more long-term benefits, such as being more willing to consider alternative solutions or being more open to alternative ideas presented by others; however, no long-term effects were measured in this study.

One possible explanation for these findings is that attributions of mistakes to the process lead to an equally mastery-oriented approach to failure as attributions of mistakes to the strategy used or a combination of the process and the strategy. From an attribution theory perspective, both statements attribute failure to controllable, external, and flexible factors. It was hypothesized that adding the suggestion of considering alternative strategies would lead to more controllable, external, flexible attributions, but it may be that both lead to equally masteryoriented attributions. This explanation also aligns with Kamins & Dweck's (1999) study that compared process praise plus the suggestion of considering alternative strategies to process praise in a small sample of young children and found no significant effects on the children's

responses to failure. Another possible explanation is that young children have difficulty interpreting the strategy-attributing cues in a statement with process praise plus the suggestion of considering alternative strategies, but that older children pick up on such cues. This would be counter to research that has found that very young children pick up on very small attributional cues (e.g. Cimpian, 2010; Cimpian & Erickson, 2012; Cimpian et al., 2007; Gelman & Heyman, 1999); however there may be more complexities in presenting the suggestion of alternative strategies that are harder for young children to grasp.

Another explanation may be that there are unconsidered factors that moderate the relationship between process praise plus the consideration of alternative strategies and masteryoriented responses to failure. Informal observations of children's reactions to the process praise plus the consideration of alternative strategies from a mother puppet revealed a large variation in children's responses. Some children responded to the statement "I can tell you worked really hard on the drawing; can you think of other ways to draw a dog?" by avoiding eye contact, shaking their head and displaying negative affect. Other children responded to the same question by smiling and verbally describing a different way that they could draw a dog. It may be that the children who responded more positively to process praise plus the suggestion of considering alternative strategies were able to pick up on more cues of external, controllable, flexible attributions for failure and responded in a more mastery-oriented way to failure than when they were exposed to process-praise alone. The children who responded more negatively to process praise plus the consideration of alternative strategies may have viewed their response to that statement as a failure that they attributed to internal, stable, uncontrollable factors. This could have led to even more attributions of their later mistake to internal, stable, and uncontrollable factors when compared to their responses to process praise alone.
Another unexpected finding of the correlational, but not the quasi-experimental study, was that parental report of negative affect and attachment insecurity were the most significant predictors of young children's reported responses to failures. Parental report of negative affect and attachment insecurity were both significantly and positively related to parental report of the young children's negative responses to failure. This means that based on parent ratings, the more negative the child's innate affect and the more insecure the child's attachment to their primary caregiver, the more helpless the child's response to failure. This indicates that depending on their temperaments, some children may be predisposed to respond helplessly while other children may be predisposed to a mastery-oriented response after experiencing failure. Likewise, children with different parenting experiences (i.e. one that promotes a secure attachment and one that promotes an insecure attachment) may respond differently to failure. Children whose parents cultivate a secure attachment may display a mastery-oriented response while those who develop an insecure attachment may display a helpless response to failure. The relationship between parental report of attachment insecurity and young children's responses to failure aligns with research indicating that the more sensitive mothers were with their infants, the more mastery-oriented their child's responses to failure were on an unsolvable task at 20 months of age (Zentall, 2009). It also is consistent with a study (Hortacsu, 1994) demonstrating that the more securely attached, children were in fourth grade, the more internal their locus of control. The relationship between parental report of negative affect and young children's responses to failure has not been considered at all in past studies, although Eisner (1995) has discussed the possibility that attribution explanatory style (i.e. optimistic vs. pessimistic) is an innate trait.

There were no clear patterns between parental report of negative affect and children's affect, attributions, and motivation after making mistakes with their puppet in either condition.

After receiving process praise, children with low negative affect had higher persistence than children with high negative affect. After receiving process praise plus the suggestion of considering alternative strategies, there were no significant correlations between persistence and negative affect. There were no clear patterns between parental report of attachment insecurity and children's affect, motivation, and persistence after making mistakes with their puppet in either condition. After receiving process praise plus the consideration of alternative strategies, children with high attachment insecurity had more attributions of failure to ability and contingent-self worth than children with low attachment insecurity (more secure). After receiving process praise alone, there were no significant correlations between attributions and attachment security.

Based on parental report, mothers' use of neutral statements, person praise, process praise, and process praise plus the consideration of alternative strategies did not influence young children's responses to failure. This indicates that if two children have been exposed to different types of praise throughout their lives, it may not lead to significant differences in their overall approach to failure across situations. This finding contrasts with past studies of person praise, process praise and neutral statements (e.g. Cimpian et al., 2007; Kamins & Dweck, 1999), which found that process praise led to significantly more mastery-oriented responses to failure than person praise and neutral statements led to the most helpless responses to failure. One possible explanation for this finding is that this study considered overall use of specific types of praise and children's general responses to failure. Past studies that have found significant results between different types of praise (e.g. Kamins & Dweck, 1999) have measured the response to failure

immediately following a specific type of praise, such as the within-subjects design utilized in the current study.

Another consideration is that this analysis considered multiple variables which had not been accounted for in past studies. In comparison to other variables, such as attachment insecurity, the specific type of praise and feedback may play a smaller role in young children's responses to failure than previously estimated. Based on attachment theory, young children with an insecure attachment may interpret interactions with the primary caregiver with a more inconsistent or unresponsive internal working model of the primary caregiver. These children with insecure attachments may also interpret personal failures with a more helpless internal working model of the self. This may lead these children to stable, uncontrollable, internal attributions of failure and more helpless responses to failure, regardless of the type of parental praise used. Young children with a secure attachment may interpret interactions with the parent with a more consistently responsive internal working model of the primary caregiver. These children with secure attachments may also interpret personal failures through a more masteryoriented internal working model of the self. This may lead these children to flexible, controllable, and external attribution and more mastery-oriented responses to failure, regardless of the type of parental praise used. Based on this framework, the attachment security that was developed in the earlier years may carry so much weight in determining young children's internal working models and attributional framework, that the effects of subtle attributional cues from statements such as praise are minimalized.

Research Question 2: Do parents' perceptions of their children's attachment security moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

Based on attachment theory, the hypothesis was that the child's attachment security, as assessed by parents' perceptions, would moderate children's responses to failure. It was hypothesized that the more securely children are attached to their parents, the more masteryoriented their response would be to failure after receiving process praise plus the suggestion of an alternative strategy compared to process praise alone. The less securely attached to their parents, the more likely children would be to exhibit helpless responses to failure after receiving process praise plus the suggestion of an alternative strategy compared to process praise alone.

Whereas attachment insecurity was a significant predictor of young children's negative responses to failure, multiple analyses revealed that attachment insecurity was not a significant moderator between process praise plus the consideration of alternative strategies and responses to failure. This indicates that if children receive process praise plus the suggestion of considering alternative strategies and are then exposed to failure, children with a secure attachment as well as children with an insecure attachment would respond similarly. Graphical analysis of the within-subjects design data did reveal the predicted moderating pattern of attachment insecurity on the relationship between praise condition and the children's affect and attributions in response to failure, but the same pattern was not found between praise condition and the children's motivation and persistence. Graphical analysis and multiple regressions for the correlational design data revealed no significant or clear moderating effect of attachment insecurity. The lack of a significant moderating effect of attachment insecurity may be due to the fact that insecurely attached children's internal working model of the parent may lead to equally negative perceptions of either statement even though a statement with the consideration of alternative strategies has more ambiguous cues. This explanation aligns with research that links attachment insecurity with perceptions of ambiguous parental interactions as more hostile

(Ziv, Oppenheim & Sagi-Schwartz, 2004); however the current study suggests that children with an insecure attachment may also perceive positive parental interactions as more hostile. Alternatively, the insecurely attached children may focus so much on the fact that they made a mistake that they discount or forget the statement that the parent made previously. This explanation is supported by research that links attachment insecurity with more accurate recall of negative social events and less accurate recall of positive social events (e.g. Belsky et al., 1996; Kirsh & Cassidy, 1997).

Research Question 3: Does the child's gender moderate the effects of the type of parental praise on children's mastery-oriented responses to failure?

It was hypothesized that gender would serve as a moderator such that girls would display the same pattern as children with insecure attachments. In contrast, boys were predicted to display mastery-oriented responses to failure after process praise as well as after process praise plus the suggestion of an alternative strategy. Gender did not serve as a significant moderator of the relationship between the type of parental praise and the young children's responses to failure. Boys and girls were equally likely to respond to a certain type of praise with a mastery-oriented response to failure or a helpless response to failure. This indicates that the use of process praise and process praise plus the suggestion of considering alternative strategies do not need to be differentiated between boys and girls. While past studies found that failure feedback leads to more aversive motivational and behavioral outcomes for girls than for boys (e.g. Dweck & Reppucci, 1973; Nicholls, 1975), the more subtle cues in process praise plus the suggestion of considering alternative strategies may be perceived as equally positive by boys and girls. Likewise, while praise with cues that diminish perceived autonomy or control tend to have more negative effects on girls than boys (e.g. Corpus & Lepper, 2007; Kast & Connor, 1988; Koestner,

Zuckerman & Koestner, 1989; Zinser, Young & King, 1982), a statement with process praise plus the suggestion of considering alternative strategies may not be perceived to diminish any autonomy or control since it is open ended and positive.

Research Question 4: What do parents believe about the effects of parental process praise and parental process praise plus the suggestion of considering alternative strategies on children's mastery-oriented responses to failure?

This question was exploratory. Mothers' beliefs about the effects of different types of praise statements on young children's responses to failure aligned with the hypotheses of the study and were consistent with an attribution theory framework. They believed process praise plus the consideration of alternative strategies to have the greatest effect on young children's responses to failure, followed by process praise, person praise, and then a neutral statement. This indicates that parents believed that process praise plus the suggestion of considering alternative strategies would be more likely to promote a mastery-oriented response to failure than process praise, person praise, or neutral statements. This suggests that mothers may intuitively view the effects of praise in a manner consistent with attribution theory. This may also be related to the high level of education of the participating mothers, since 95.3% of participating mothers attended at least some college classes and 100% graduated from high school. The findings of the current study are actually counter to these beliefs and raise questions about the true significance of different types of praise statements on young children's responses to failure when compared to other factors.

Another finding of this study was not related to a specific research question, but is important to highlight. Correlations revealed that young children's affect and attributions after making a mistake with puppets were not significantly related to their motivation and persistence

to keep trying the task on which they made a mistake with the puppets. One possible explanation is that this form of measurement, which involved asking children questions after acting out scenes with puppets, may not have been authentic enough to accurately reflect their actual affect, attributions, motivation, and persistence when they make mistakes in the real world. This is believed to be the case, since correlational analysis of the Negative Responses to Failure scale revealed significant (p < .05), moderate (r > .3) correlations between items that measure persistence (e.g. "Gives up easily if cannot do something.") and items that measure affect and attributions (e.g. "Lowers head or slumps over when he or she does not do well at something."). Also, past studies found significant associations between affect, attributions, motivation, and persistence in relation to achievement outcomes (e.g. Graham & Weiner, 1991; Peterson & Schreiber, 2006) and in relation to helpless versus mastery-oriented responses to failure (e.g. Diener & Dweck, 1978; 1980).

Conclusions

The results of the current study indicated that parents' use of process praise plus the suggestion of considering alternative strategies did not increase children's mastery orientation in response to failure as compared to process praise. While the expected benefits of the suggestion of considering alternative strategies was not found, there was no detrimental effect in adding such a statement and there may be possible long-term benefits. In addition, this study found that parental report of attachment insecurity and negative affect were significantly related to parental reports of young children's responses to failure. In comparison, parental use of person praise, process praise, and neutral praise were not significantly related to parental report of young children's responses to failure. This may be due to the way these constructs were measured, but it may also be due to attachment insecurity and temperament minimizing the effects of different

types of praise. Past studies did not consider attachment insecurity or temperament when examining the effects of different types of praise statements on young children's responses to failure. Also, past studies did not focus on differentiating between process praise and process praise plus the consideration of alternative strategies.

An intriguing finding from the correlational design was the significant relationship between parental report of attachment insecurity and young children's responses to failure. The survey data findings suggest that children with an insecure attachment are more likely to display a helpless response to failure that is pointed out by their mother than their securely attached peers, regardless of what type of feedback or praise they typically receive from the mother after a success. This corresponds with attachment research which suggests that insecurely attached children are more likely than their securely attached peers to notice and pay attention to any negative feedback from their primary caregiver and ignore positive feedback from their primary caregiver. It also corresponds with research that found insecurely attached children are more likely to have an internal locus of control, which would lead to more internal, stable, uncontrollable attributions of failure. This same relationship was not found however, between attachment insecurity and young children's responses in the within subjects design, with one exception. After exposure to process praise plus the suggestion of considering alternative strategies, children with high attachment insecurity were significantly more likely to make attributions of failure to ability and contingent self-worth than securely attached children. This same pattern was not found when considering affect, motivation, and persistence after failure. After exposure to process praise only, there were no significant relationships between affect, attributions, motivation, and persistence after failure and young children's attachment insecurity.

One possible explanation for these discrepant findings between the correlational and within-subjects designs is that the survey measure of children's responses to failure is considering the child's overall pattern of responses to failure, whereas the puppet response measure is based on their responses in a specific situation. A child's attachment insecurity may be related to their overall pattern of responses to failure, but it may have little relation to their response in the specific scenario used in the within-subjects design. Another possible explanation is that the puppet response method of measuring children's responses to failure is not representative of children's responses to mistakes and failures in real life. Some evidence of this can be found in the lack of correlation between measures of affect, attributions, motivation, and persistence when a child responded to questions after their puppet made a mistake. These findings contradict the relationships between these variables in the survey measure and past studies.

It was also notable that negative affect had the strongest and most significant relationship to negative responses to failure in the correlational design. This same relationship was not found however, between temperament and young children's responses in the within subjects design, with one exception. After exposure to process praise, children with lower negative affect had significantly more persistent responses to failure than children with high negative affect. This same pattern was not found when considering affect, attributions, and motivation after failure. After exposure to process praise plus the suggestion of considering alternative strategies, there were no significant relationships between affect, attributions, motivation, and persistence after failure and young children's negative affect.

Temperament is a factor that has not previously been considered in relation to young children's responses to failure, but these findings highlight the need to research temperament

factors in more depth. The fact that a measure of temperament was the most powerful predictor of responses to failure suggests that perhaps helplessness may in part be a result of innate traits. Specific traits may predispose a child to attribute failure to internal, uncontrollable, stable factors or to external, controllable, flexible factors. It would be beneficial to examine which traits, including negative affect, are the greatest predictors of young children's attributions and responses to failure. It is also important to note that parental report of attachment insecurity was not strongly correlated with the child's reported negative affect. This indicates that the effects of these factors cannot be attributed to overlap in the constructs themselves.

Taken together, these findings shed some light on the problem of helpless responses to failure in young children. First, process praise plus the suggestion of alternative strategies may lead young children to equally mastery-oriented responses to failure as process praise alone; however more research is needed to consider long-term effects and to account for shortcomings of the current research design. Second, young children's responses to failure appear to be bolstered by a secure attachment to their primary caregiver. This suggests that sensitive and consistent caregiving in infancy and early childhood may be an essential to promoting mastery-oriented responses to failure may better illuminate our understanding of this relationship. Third, young children's responses to failure appear to be closely related to the temperamental trait of negative affect. This suggests that children may be born with specific traits that predispose them to helpless or mastery-oriented responses to failure; however, more research on the effects of specific traits can provide a clearer picture of the importance of temperament.

Limitations of the Study

One limitation of the current study is that the correlational design of the survey study did not allow for a determination of causation. While attachment insecurity and negative affect were both significantly related to young children's responses to failure based on the survey data, it cannot be concluded that attachment insecurity and negative affect cause young children's helpless responses to failure. It cannot be ruled out that there is another factor that is leading to both high attachment insecurity and helpless responses to failure, or that another factor is leading to both high negative affect and helpless responses to failure. Likewise, it cannot be ruled out that young children's helpless responses to failure cause insecure attachments or negative affect. Theoretically and conceptually, the direction of the relationship may be clear, but the correlational design of the study means that these alternative explanations cannot be ruled out.

Another limitation is that the behavioral analogue puppet task may have led to different responses from participants than they would have provided in naturally occurring situations. The construct validity is dependent on the child responding to the puppet vignettes in a similar way to how they respond to salient events and stimuli in the natural environment. The lack of correlation between the young children's affect, attributions, motivation, and persistence in response to failure indicate that the task may not have been a valid assessment of their responses to failure and feedback. Despite these limitations, the use of two designs within the study allowed for the opportunity to collect multiple sources of data to compare and contrast the results of each, providing a richer and more comprehensive view of the relationships between these constructs.

Another limitation of the behavior analogue puppet task is that responses to failure were based on the child's responses in a 15 minute session. While the child responded to two different

failure scenarios in the 15 minute session, the child's answers may have depended on how they were feeling in that moment. It is also possible that some of the children may not have interpreted the situations as a failure, although the interpretation of that situation as a learning opportunity instead, has been associated with more mastery-oriented responses to failure in past studies (e.g. Diener & Dweck, 1978; 1980).

A weakness of the measures used in the study is that the assessments of parental use of praise, the child's reported responses to failure, and the parent's perception of the child's attachment security are all based on survey responses as opposed to behavioral measures. Responses may be biased based on how the respondent was feeling at the time they completed the surveys, based on their attitude towards their child, and even based on who was willing to complete the surveys. For example, the PCRI is based on the mother's perceptions of the child's reunion behaviors, but a mother's responses may be influenced based on her mood when she completed the survey as opposed to remaining an objective description of these events. For this reason, the PCRI is considered as the mother's perceptions of the child's attachment security. It is believed that considering the mother's perceptions of the child's attachment security is an important variable that is conceptually linked to the child's attachment security. Another weakness of the measure of parental use of praise is that the test-retest reliability of the MPS has not been verified. This means that the consistency of parental responses to the questions on the MPS over time is unknown and these responses may change based on respondent characteristics.

There are also limitations of the statistical analyses and interpretations of the analyses due to the fact that multiple variables violated the assumptions of a normal distribution. The nonparametric analyses did reveal the nature of the relationships between the variables of interest; however they were not as powerful and did not give as detailed of information about

these relationships as their parametric equivalents. In addition, there is no widely accepted method of considering moderating variables using nonparametric analyses. For this reason, parametric analyses were used to consider the moderating variables of attachment insecurity and gender, even though the interpretive utility of these analyses is limited.

Another limitation of the current study is that some characteristics of the participants were not taken into account. The effects of many characteristics of the recipient of praise, such as race and ethnicity, remain largely unknown. Temperament may play an especially influential role in explaining some of the differences in effects of praise between individuals. Parental education is another factor that may moderate the effects of responses to failure. While this study focused on the moderating effects of attachment security and gender on the relationships between parental praise dimensions and responses to failure, future studies examining this topic should take these additional factors into consideration.

In addition, the cultural context of the parent-child relationship was not taken into account when considering the effects of praise. While mothers' beliefs about the effects of different types of praise were examined in the current study, a more in-depth analysis of how differing cultural beliefs (e.g. discipline, affection, etc.) might moderate the effects of praise should be explored in future research. Another weakness in the current study is that due to the method of recruiting participants through childcare settings and due to the demographics of the cities that they were recruited from, the participants may not be representative of the larger population and may over-represent or under-represent certain subgroups, thus limiting generalizability. Of particular note, 95.3% of participating mothers attended at least some college classes and 100% graduated from high school. This indicates a greater representation in this study, of mothers who had formal education. In addition, races other than White are under-

represented; no mothers reported their race as Black or American Indian or Alaska Native and only 3.8% of mothers reported their race as Hispanic. Other characteristics of the participants were not gathered, but due to the demographics of the area, may over-represent or underrepresent certain subgroups. For example, members of the LDS church are likely overrepresented while members of other religious groups are likely under-represented.

The sample may also be skewed due to selection bias. There may be some characteristics of the parents who chose to participate that differentiated them from those who did not. For example, mothers with less education or with more racial diversity may have been less willing to participate in the study. The six children who chose not to participate also appeared to be significantly more anxious than the children who did participate. Perhaps the skew in the data is due to the absence of the data from these children or to the select nature of the sample. It is possible that the inclusion of these six children may have led to strengthening the findings of the current study. Their anxious state was apparent when they first entered the room and may have been due to innate traits or attachment insecurity. Had they participated, their anxiety might have made it difficult for them to respond well to any failure, regardless of the type of praise they received from the parent puppet. Alternatively, their anxiety might have increased their sensitivity to the different praise conditions and revealed greater differences between process praise and process praise plus the suggestion of considering alternative strategies.

Implications for Practice and Future Research

Considering the results of the current study, there are many implications for both practice and research. Process praise plus the suggestion of considering alternative strategies did not have any detrimental or beneficial effect on young children's responses to failure when compared to process praise alone, but it may have some long-term benefits. Parents and teachers

may wish to consider using such statements to promote external, controllable, flexible attributions while also promoting the consideration of alternative ideas and ways of thinking. Researchers may wish to consider how process praise plus the suggestion of considering alternative strategies influences young children's flexible thinking, such as their willingness to consider different ideas. The long-term effects of process praise plus the suggestion of considering alternative strategies could also be considered in future research. The current study only considered immediate effects, but the repeated exposure to suggestions of considering alternative strategies may lead to a more positive response to critical feedback over time. Also, more studies may wish to consider the long-term effects of neutral statements compared to person and process praise, since these statements may have less influence on young children's responses to failure than previously considered. Past studies of these different praise statements used designs such as the puppet vignettes used in the current study and found significant immediate effects; however the correlational design in the current study revealed that the effects of these different types of praise on children's overall response to failure over time may be negligible.

The significant relation between parental perceptions of attachment insecurity and young children's reported responses to failure highlights the need for responsive and consistent parenting in early childhood. Consistently responsive parenting in early childhood will foster a child's secure attachment, which may promote mastery-oriented responses to failure in a variety of settings. Future research on attachment security may wish to consider mastery-oriented responses to failure as a potential outcome. This finding also revealed that the effects of specific types of feedback and praise cannot be considered in isolation from the context of the relationships in which the statements are given. Considering the effects of praise in an

experimental setting with a complete stranger providing the praise cannot be generalized to praise given in other relationships. Also, the puppet vignette behavioral analogue research design should be used with caution since the child may not respond to puppets in the same way that they would respond in the context of an interaction with real people. Future studies should measure the effects of praise within the contexts of the specific relationships in which they are delivered (e.g. parent-child, teacher-student, etc.), since these relationships may have a more powerful influence on the child's perceptions and behavior than the specific form of praise itself. The current study provides some preliminary support for this possibility that the relationship within which the praise is delivered (i.e. considered in the form of attachment insecurity) may be more influential than the specific type of praise given (i.e. all forms of praise had non-significant effects on young children's responses to failure). It is also important to continue to consider attachment security in relation to young children's responses to failure since this appears to play a significant role. The current findings suggested that the early relationship between children and their primary caregiver play a more important role in the development of motivation than indicated by previous research. Future research may consider young children's responses to failure in relation to a more in-depth measure of attachment security, such as the strange situation paradigm.

Future research should also consider the role of different temperamental traits in the development of helpless versus mastery-oriented responses to failure. Past research has only hypothesized about this relationship (e.g. Eisner, 1995), but the current study suggests that temperament may play a large role in explaining responses to failure. More in-depth measures of temperament, such as the Child Behavior Questionnaire, Standard Form, may help to provide more precise and complete information. A measure such as the Child Behavior Questionnaire,

Standard Form would also allow for consideration of other traits besides negative affect, such as sadness, shyness, and fear.

The significant relation between the children's reported negative affect and their reported responses to failure indicate that children may be born with innate tendencies to attribute failure to uncontrollable, internal, stable factors or controllable, external, flexible factors. Considering the influence of both attachment insecurity and temperament, parents and teachers should exercise patience when children are displaying helpless responses to failure since they may have developed a pattern of internal, stable, uncontrollable attributions of failure that has become entrenched over time. This does not mean that parents and teachers should not attempt to help children to develop a more mastery-oriented way of responding to failure; however, the use of a specific type of praise with subtle attributional cues may not lead to significant, long-standing changes. It may take more encouragement, praise, and consistent responsiveness and support than previously considered.

APPENDICES

Appendix A: Puppet Vignette Script

Okay, so today we are going to play a pretending game. And we're going to play with toys and act out stories. Then I'm going to ask you a few questions. And we're going to pretend that one of these toys is you. Which one do you want to be? Okay, and this one is going to be your mom. Let's pretend that your mom is playing with you, and right now she's going to ask you a few questions:

- (Child's name), what is your favorite color?
- (Child's name), do you have any brothers or sisters?
- (Child's name), what's your favorite kind of ice cream?

Now let's play a drawing game. We're going to act out a few stories and pretend that these puppets are you and your mom. Here. Pretend this is a green crayon.

- One day you were drawing with your green crayon and your Mom said, "(Child's name), will you make a tree for me?" and you said "OK, Mom." And so you started drawing a tree. First, you drew the trunk and then the branches. Next, you added the green leaves. You wanted to show your Mom the tree you drew, and so you said "Mom, I drew a tree for you," and you looked back at the drawing and thought to yourself, "Yep, I drew a tree." When your Mom came over and saw the tree you drew she said, "That looks like a tree.
 - a. I can tell you worked really hard on the drawing. [process]
 - b. I can tell you worked really hard on the drawing; can you think of other ways to draw a tree? [process plus the suggestion of considering alternative strategies]

Okay, now let me give you this orange crayon.

2) Another day you were playing at the drawing table with your orange crayon and your Mom said, "(Child's name), will you make a flower for me?" and you said "OK, Mom." And so you started drawing a flower. First, you drew a circle and colored it in to make the center of your flower. Next you drew five orange petals. You wanted to show your Mom the flower you drew, and so you said "Mom, I drew a flower for you," and you looked back at the drawing and thought to yourself, "Yep, I drew a flower." When your Mom came over and saw the flower you drew she said, "That looks like a flower.

- a. I can tell you worked really hard on the drawing. [process]
- *b.* I can tell you worked really hard on the drawing; can you think of other ways to draw a flower? [process plus the suggestion of considering alternative strategies]

Okay, now here's this red crayon.

- 3) Pretend one day you were playing at the drawing table with your red crayon and your Mom said, "(Child's name), will you make an apple for me?" and you said "OK, Mom." And so you started drawing an apple. First, you drew a circle and colored it in to make the red apple. Next you drew the stem and a leaf coming out of the top. You wanted to show your Mom the apple you drew, and so you said "Mom, I drew an apple for you," and you looked back at the drawing and thought to yourself, "Yep, I drew an apple." When your Mom came over and saw the apple you drew she said, "That looks like an apple.
 - a. I can tell you worked really hard on the drawing. [process]
 - b. I can tell you worked really hard on the drawing; can you think of other ways to draw an apple? [process plus the suggestion of considering alternative strategies]"

Before we go on I'm going to ask you a few questions about this **apple** story.

(a) Do you like the apple that you drew or do you not like it?

 $\circ~$ How much do you like/not like it? Do you SORT OF like/not like it, do you

like/not like it, or do you REALLY like/not like it?

(b) Did what happened in the apple story make you feel happy or sad?

• How happy/sad? Were you SORT OF happy/sad, happy/sad, or REALLY happy/sad?

(c) Did everything that happened in the apple story make you feel like you were good at drawing or not good at drawing?

(d) Did everything that happened in the apple story make you feel like you were a good boy/girl or not a good boy/girl?

Okay, now let's go on. Pretend this is a brown crayon.

- 4) And one day you were playing at the drawing table with your brown crayon and your Mom said, "(Child's name), will you make a dog for me?" and you said "OK, Mom." And so you started drawing a dog. First, you drew in his head and his face. Next you drew his body with your brown crayon. You wanted to show your Mom the dog you drew, and so you said "Mom, I drew a dog for you," and you looked back at the drawing and thought to yourself, "Yep, I drew a dog." When your Mom came over and saw the dog you drew she said, "That looks like a dog.
 - a. I can tell you worked really hard on the drawing.[process]
 - b. *I can tell you worked really hard on the drawing; can you think of other ways to draw a dog?* [process plus the suggestion of considering alternative strategies]"

Here is a yellow crayon.

Another day you were playing at the drawing table with your yellow crayon. After a little while, your Mom says, "(Child's name), will you make a bus for me?" and you say "OK, mom." First you draw a long rectangle and then you add the windows. Next, you color it in yellow. You look at what you did and think to yourself, "Uh-oh, the bus doesn't have any wheels," but you want to show your Mom the bus you drew and so you say, "Mom, I drew a bus for you." Your Mom looks at the bus you drew and says, "That doesn't look like a bus; it has no wheels."

Let's see what happens in the next story. [hand black pipe-cleaner]

6) Another day you were playing at the drawing table with your black crayon. After a little while, your Mom says, "(Child's name), will you make a cat for me?" and you say "OK, Mom." First you draw a circle to make the cat's face. Next, you add the body and color it in black. You look at what you did and think to yourself, "Uh-oh, the cat doesn't have any ears," but you want to show your Mom the cat you drew and so you say "Mom, I drew a cat for you." Your Mom looks at the cat you drew and says, "That doesn't look like a cat; it has no ears."

Okay, now I'm going to ask you some questions about this **cat** story. (a) Do you like the cat that you drew or do you not like it? • How much do you like/not like it? Do you SORT OF like/not like it, do you like/not like it, or do you REALLY like/not like it?

(b) Did what happened in the cat story where you forgot the ears make you feel happy or sad?

• How happy/sad? Were you SORT OF happy/sad, happy/sad, or REALLY happy/sad?

(c) Did everything that happened in the cat story where you forgot the ears make you feel like you were good at drawing or not good at drawing?

(d) Did everything that happened in the cat story where you forgot the ears make you feel like you were a good boy/girl or not a good boy/girl?

(e) On another day, when you had a chance to draw one of these again, would you want to draw the bus, want to draw the tree, or want to draw the cat?

(f) If you had a chance to do something tomorrow, would you draw or would you do something else?

(g) Think about the story where you drew a cat and forgot the ears. What would you do now?Would you keep working on the drawing of the cat, or would you do something else?

(h) Think about the story where you drew a bus and forgot the wheels. What would you do now? Would you keep working on the drawing of the bus or would you do something else?

Now I'm going to ask some different kinds of questions¹:

• Imagine a new student is in your class, Sally/Ken (depending on gender). She/he steals your crayons, scribbles on your paper, and spills your juice. Then she/he calls you names. Do you think she/he will always act this way?

• Imagine a new student is in your class. You look over at her/him and see that she/he did not wash her/his hands before she/he ate the food at snack time. Does this mean she/he is bad?

Okay, so let's try the bus again:

7) Another day you were playing and your Mom says, "Will you make a bus for me?" and you say "OK, Mom." So you work really hard and try to draw a good bus for your Mom. You really want to do well, and when you look at what you did, you think to yourself, "The bus needs wheels," so you draw them in, and you say to your Mom, "Mom, I drew a bus." Your Mom looks at the bus you drew and says, "You found a really good way to draw the bus. I see it is yellow and has wheels."

That went well. Let's see about the cat:

8) Another day you were playing at the drawing table and your Mom asks you to make a cat and you say "OK, Mom." So you work really hard and try to draw a good cat for your mom. You really want to do well and when you look at what you did, you think to yourself, "This cat needs ears," so you draw them in with the black crayon, and you say to your Mom, "Mom, I drew a cat." Your Mom looks at the cat you drew and says, "You found a really good way to draw the cat. I see that it is black and has ears."

¹ These two questions were included for parallelism with Kamins and Dweck (1999) but were not directly pertinent to our manipulation, so we did not discuss them in the proposal.

Appendix B: Background Questionnaire				
Child's Name:	School or Childcare Setting:			
Child's Gender:_ Female	Child's Birth Date: _/_/			
Years in childcare:	Grade in school:			
Mother's Name:				
Person in the home that spends the most time	e taking care of the child:			
Does your child have difficulty communicating or understanding speech? \Box Yes \Box No				
The research materials will be presented in English. Will you or your child have difficulty completing these tasks in English?				
Address (used only to send the gift card):				
Please answer the following questions only if you feel comfortable doing so: What is your race and/or ethic origin? (check the descriptor(s) that best applies)				
□ American Indian or Alaskan Native	□ White, not of Hispanic origin			
□ Asian or Pacific Islander	□ Multiracial (please specify above)			
\Box Black, not of Hispanic origin	□ Other (please specify:)			
□ Hispanic				
What is your highest level of education? (please check one)				
□ Some high school	College graduate (e.g., B.A., B.S.)			
□ High school graduate	Graduate degree (e.g., M.A.)			
□ Some college	□ Professional degree (e.g., M.D., Ph.D., J.D.)			

Appendix C: Maternal Praise Survey

Ethan/Emma is 4 years old and attends preschool. Ethan/Emma enjoys school and tends to do fairly well. One day, Ethan/Emma was working on some wooden jigsaw puzzles that his mother had given him. The puzzles were interesting and he was able to finish two of them fairly quickly, though he wasn't sure how long it would take most children to complete them. When Ethan/Emma's mother walked into the room she stopped at the table where Ethan/Emma was working.

a. What would YOU say to Ethan/Emma if you were his mother?

Ethan/Emma's mother commented in one of the following ways: (*Please read each response and circle a number on the rating scales*).

a. "Wow! That's really good. You must have been really thinking!"

i. How likely is it that you would respond in this way?

1-----7 NOT very likely very likely

ii. How "motivating" is the mother's response for Ethan/Emma?

12	36	7
will make Ethan/Emma	will have no effect	will make Ethan/Emma
LESS interested in puzzles		MORE interested in puzzles

iii. How well does the mother's statement "prepare" Ethan/Emma for future setbacks (i.e., how will Ethan/Emma react if faced with failures in the future on similar puzzle tasks)?

13-	6	7
does NOT prepare		prepares Ethan/Emma
Ethan/Emma well		well

b. "Wow! That's really good. You must be good at puzzles!"

i. How likely is it that you would respond in this way?

1-----7 NOT very likely very likely

ii. How "motivating" is the mother's response for Ethan/Emma?

1-----2-----3-----4-----5------7will make Ethan/EmmaLESS interested in puzzlesMORE interested in puzzles

iii. How well does the mother's statement "prepare" Ethan/Emma for future setbacks (i.e., how will Ethan/Emma react if faced with failures in the future on similar puzzle tasks)?

1------7 does NOT prepare prepares Ethan/Emma Ethan/Emma well well

c. "Okay. It looks like you finished playing with the puzzles."

i. How likely is it that you would respond in this way?

1-----7 NOT very likely very likely

ii. How "motivating" is the mother's response for Ethan/Emma?

1------23-----4----5-----6-----7will make Ethan/Emmawill have no effectLESS interested in puzzlesMORE interested in puzzles

iii. How well does the mother's statement "prepare" Ethan/Emma for future setbacks (i.e., how will Ethan/Emma react if faced with failures in the future on similar puzzle tasks)?

1-----7 does NOT prepare prepares Ethan/Emma Ethan/Emma well well

d. "Wow! That's really good. You must have been really thinking! Can you think of other ways to work on the puzzles?"

i. How likely is it that you would respond in this way?

1-----7 NOT very likely very likely

ii. How "motivating" is the mother's response for Ethan/Emma?

1-----2-----3-----4-----5-----6-----7will make Ethan/EmmaLESS interested in puzzlesMORE interested in puzzles

iii. How well does the mother's statement "prepare" Ethan/Emma for future setbacks (i.e., how will Ethan/Emma react if faced with failures in the future on similar puzzle tasks)?

1-----7 does NOT prepare prepares Ethan/Emma Ethan/Emma well well

Appendix D: Research Participant Information and Consent Form

You are being asked to participate in a research project. Researchers are required to provide a consent form to inform you about the study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title: Children's Mastery-Oriented Responses to Failure: The Effects of Parental Strategy Feedback and Attachment Security

Researcher: Romney Stevens, M. A., Doctoral Candidate in School Psychology

University: Michigan State University, Department of Counseling, Educational Psychology, & Special Education

Research Supervisor: Dr. Evelyn R. Oka, Associate Professor, School Psychology & Educational Psychology

Address and Contact Information:

1. PURPOSE OF RESEARCH: You are being asked to participate in a research study of the effects of praise and the parent-child relationship on young children's responses to failure. This study is being conducted by Romney Stevens, a doctoral student at Michigan State University. You have been selected as a possible participant in this study because you are the mother of a child between the ages of 4-6. You are receiving this information because your child attends ______. From this study, the researchers hope to learn how feedback affect's children's motivation, especially on difficult tasks. The researchers also hope to learn how the relationship between mothers and their children is related to children's responses to failure. Your participation in this study will take about 45 minutes and your child's participation in the study will take about 30 minutes, divided into two 15-minute segments. If you are under 18, you cannot be in this study without parental permission.

2. WHAT YOU WILL DO: First, you will complete and return this informed consent form, as well as the accompanying background questionnaire. Next, questionnaires for you to complete will be sent home with your child. You will complete several surveys that gather information about your background, your child's responses to feedback, your responses to your child's successes, and your relationship with your child. These questionnaires take approximately 45 minutes to complete. You will complete these questionnaires and mail them in a pre-addressed and stamped envelope that you will receive with the questionnaires.

3. WHAT YOUR CHILD WILL DO: After your completion of these questionnaires, your child will meet with research assistants at the childcare for two 15 minute sessions over two weeks. On each occasion, your child will use puppets to pretend to draw pictures of everyday objects. They will receive feedback from a mother puppet. Your child will also answer questions about this task. This takes approximately 15 minutes, for a total of 30 minutes of participation across the two meetings. Your child's participation or lack of participation in this research is completely separate from your child's enrollment and standing at _____. After completing these tasks, you will receive additional information about the nature of the research. You will also receive a summary of the general findings of the research after the study is completed.

4. POTENTIAL BENEFITS: Your participation in this study is important because it can help us to learn how to promote the development of children's motivation at young ages. These results can also contribute to the understanding of the roles that the mother-child relationship and mothers' responses to their child have on their child's way of dealing with failure.

5. POTENTIAL RISKS: This study involves your spending time to complete the questionnaires and your child spending time away from their usual activities to complete the data collection. Children typically enjoy the activity, but there is a risk that they may be temporarily uncomfortable during the puppet activity when the puppet points out pretend mistakes. To ensure that children are comfortable, the activity ends with the child successfully completing the activity. The potential risks of participating in this study are minimal for mothers, but include possible feelings of discomfort when answering questions about your child or your relationship with your child.

6. PRIVACY AND CONFIDENTIALITY: The data for this project will be kept confidential. All of the questionnaires will be mailed directly to a secure location and will be kept in a locked cabinet. The identifying information from these questionnaires will be removed and replaced by anonymous ID codes. All data will be securely stored on a password protected computer without any identifying information. The only people who will have access to the data will be the researchers and the Institutional Review Board (IRB) that makes sure that the research is conducted in a safe and appropriate manner. Information about you will be kept confidential to the maximum extent allowable by law unless there is any evidence of intent to harm one's self or others. If we suspect a child is or may be abused or neglected, we must contact Children's Protective Health Services immediately. Staff at your child's school or childcare setting will **not** have any access to the data collected at their site, unless you give permission for them to observe the data collection. The results of this study may be published or presented at professional meetings, but the identities of all research participants will remain anonymous.

7. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW: Participation in this research project is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. Your withdrawal or incomplete participation excludes you from receiving compensation for participating. You may choose not to answer specific questions or to stop participating at any time. Choosing not to participate or withdrawing from this study will not make any difference in the quality of the services you receive from the childcare or school. Also, choosing not to participate or withdrawing from this study will not make any difference in the quality of the services you receive from the childcare to any benefits to which you are otherwise entitled.

8. COSTS AND COMPENSATION FOR BEING IN THE STUDY: There is no cost to participating in this research. You will be compensated for your participation in this study with a \$20 gift card to a local or online store. This card will be mailed to your house after you complete the questionnaires. As a token of our appreciation, your child will receive two finger puppets at the conclusion of each session for a total of four finger puppets.

9. CONTACT INFORMATION FOR QUESTIONS AND CONCERNS (Required element of consent)

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact Romney Stevens at ,517-755-8557 or via e-mail at <u>steve436@msu.edu</u> or Dr. Evelyn Oka, by phone: 517-432-9615; email: <u>evoka@msu.edu</u>; mail: 620 Farm Lane Room 439 Erickson Hall, Michigan State University, East Lansing, MI, 48824

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail <u>irb@msu.edu</u> or regular mail at 408 W. Circle Dr. Rm 207 Olds Hall, MSU, East Lansing, MI 48824.

10. DOCUMENTATION OF INFORMED CONSENT.

Your signature below means that you voluntarily agree to participate in this research study.

Signature

Date

You will be given a copy of this form to keep.

Appendix E: Research Participant Information and Parental Permission Form

You are being asked for permission for your child to participate in a research project. Researchers are required to provide a parental permission form to inform you about the study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title: Children's Mastery-Oriented Responses to Failure: The Effects of Parental Strategy Feedback and Attachment Security Researcher and Title: Romney Stevens, M. A., Doctoral Candidate in School Psychology Department and Institution: Department of Counseling, Educational Psychology, & Special Education at Michigan State University Address and Contact Information:

1. PURPOSE OF RESEARCH: You are being asked for permission for your child to participate in a research study of the effects of praise and the parent-child relationship on young children's responses to failure. This study is being conducted collaboratively by Romney Stevens, a graduate student at Michigan State University. Your child has been selected as a possible participant in this study because they are between the ages of 4-6. You are receiving this information because your child attends ______. From this study, the researchers hope to learn how feedback affect's children's motivation, especially on difficult tasks. The researchers also hope to learn how the relationship between mothers and their children is related to children's responses to failure. In the entire study, about 50 mother-child dyads are being asked to participate. In the entire study, about 50 mother-child dyads are being asked to participate. Your child's participation in this study will take about 30 minutes, divided into two 15-minute segments.

2. WHAT YOUR CHILD WILL DO: After your completion of a number of questionnaires, your child will meet privately with two research assistants at the childcare on two separate occasions. On each occasion, your child will use puppets to act out scenes that involve drawing pictures and receiving feedback from a mother puppet. Your child will also answer questions about acting out these scenes. This procedure will last approximately 15 minutes, for a total of 30 minutes of participation across the two meetings. Your child's participation or lack of participation in this research is completely separate from your child's enrollment and standing at _____. After completing these tasks, you will receive additional information about the nature of the research. You will also receive the findings of the research after the research is complete.

3. POTENTIAL BENEFITS: Your child's participation in this study is important because it can help us to learn how to promote the development of children's motivation at young ages. These results can also contribute to the understanding of the roles that the mother-child relationship and mothers' responses to their child have on their child's way of dealing with failure.

4. POTENTIAL RISKS: This study involves your child spending time away from their usual activities to complete data collection. Children typically enjoy the puppet activity, but there is a risk that they may be temporarily uncomfortable during the puppet activity when the puppet points out mistakes. To ensure that children are comfortable, the activity ends with the child successfully completing the activity.

5. PRIVACY AND CONFIDENTIALITY: The data for this project will be kept confidential. All of the questionnaires will be mailed directly to a secure location and will be kept in a locked cabinet. The personal information from these questionnaires will be removed and replaced by id codes. All data will be securely stored on a password-protected computer without any identifying information. The only people who will have access to the data will be the researchers and the Institutional Review Board (IRB) that makes sure that the research is conducted in an appropriate manner. Information about you will be

kept confidential to the maximum extent allowable by law unless there is any evidence of intent to harm one's self or others. If we suspect a child is or may be abused or neglected, we must contact Children's Protective Health Services immediately. Staff at your child's childcare or school will not have any access to the data collected at their site, unless you give permission for them to observe the data collection. The results of this study may be published or presented at professional meetings, but the identities of all research participants will remain anonymous.

6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW: Participation in this research project is completely voluntary. Your child has the right to say no. Your child may change their mind at any time and withdraw. Withdrawal or incomplete participation excludes your child from receiving compensation for participating. You may choose not to answer specific questions or to stop participating at any time. Choosing not to participate or withdrawing from this study will not make any difference in the quality of the services you receive from the childcare or school. Also, choosing not to participate or withdrawing from this study will not make any difference to any benefits to which you are otherwise entitled.

7. COSTS AND COMPENSATION FOR BEING IN THE STUDY: There is no cost to participating in this research. As a token of our appreciation, your child will receive two finger puppets at the conclusion of each session for a total of four finger puppets.

8. CONTACT INFORMATION FOR QUESTIONS AND CONCERNS

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact Romney Stevens via mail at , via e-mail at steve436@msu.edu, or via phone at 517-755-8557.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail <u>irb@msu.edu</u> or regular mail at 408 W. Circle Dr. Rm 207 Olds Hall, MSU, East Lansing, MI 48824.

9. DOCUMENTATION OF PARENTAL PERMISSION.

Child's name

Child's age

Your relationship to the child

Your signature below means that you voluntarily agree to allow your child to participate in this research study.

Signature

Date

You will be given a copy of this form to keep.

Appendix F: Verbal Assent Script

Hi. My name is _____. I go to school. I'm trying to learn about how Mommies work with boys and girls.

We are going to play with puppets. You will choose a puppet and I will choose a mommy puppet. You will hear a story and act it out with your puppet. Then I will ask you questions. You get to choose how to answer the questions. I won't tell other people how you answer the questions.

By playing with the puppets, you will help me learn about how mommies work with boys and girls. You will also get to choose two of these animal finger puppets *[hold up puppets]* after we are done playing with the puppets.

Your mom says it's okay for you to do this, but you can stop at any time. If you have any questions while we are playing with the puppets, you can ask me.

If you have a question later that you don't think of now, you can ask [your parents/teacher].

Do you have any questions for me now?

Would you like to start playing with the puppets?

NOTES TO RESEARCHER: The child should answer "Yes" or "No." Only a definite "Yes" may be taken as assent to participate.

Name of Child:	Par	ental Permission on File:	
Yes □ No with assent or research procedures.)		(If "No," do not proceed	
Child's Voluntary Response to Participation:	□ Yes	□ No	
Signature of Researcher:		Date:	

Appendix G: Figures



Inventory Attachment Insecurity Scale





Figure 2: Distribution of Mean Negative Response to Failure across the Negative Affect Scale



Figure 3: Distribution of Mean Affect, Attributions, Motivation, and Persistence across

Condition

Parental_praise_condition


Figure 4: Distribution of Mean Affect, Attributions, Motivation, and Persistence across Gender



Questionnaire Negative Affect Scale

Figure 5: Distribution of Mean Affect, Attributions, and Persistence across the Child Behavior



Reunion Inventory Attachment Insecurity Scale

Figure 6: Distribution of Mean Affect, Motivation, and Persistence across the Parent Child





Inventory Attachment Insecurity Scale



Figure 8: Distribution of Mean Negative Response to Failure Scale across Use of Process Praise Plus the Suggestion of Considering Alternative Strategies Scale by Attachment Insecurity Group





Parental_praise_condition



Figure 10: Distribution of Mean Attributions across Praise Condition by Attachment Insecurity

Groups

Parental_praise_condition





Groups

Parental_praise_condition



Figure 12: Distribution of Mean Persistence across Praise Condition by Attachment Insecurity



Figure 13: Distribution of Mean Negative Response to Failure Scale across Use of Process Praise

Plus The Suggestion of Considering Alternative Strategies Scale by Gender



Figure 14: Distribution of Mean Affect across Praise Condition by Gender





Figure 15: Distribution of Mean Attributions across Praise Condition by Gender



Figure 16: Distribution of Mean Motivation across Praise Condition by Gender



Figure 17: Distribution of Mean Persistence across Praise Condition by Gender



Neutral Statements

Figure 18: Means of Mothers' Beliefs about the Motivational Effects of Different Praise and



and Neutral Statements

Figure 19: Means of Mothers' Beliefs about the Response to Failure Effects of Different Praise

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