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The Influence of Praise on Help-Seeking Behavior in Young Children

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy

in

Psychology

by

Lisa Marie Tully

Committee in charge:

Professor Leslie J. Carver, Chair  
Professor Seana Coulson  
Professor Sarah Creel  
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Professor David Liu

2012

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Chair

University of California, San Diego

2012

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## ABSTRACT OF THE DISSERTATION

The Influence of Praise on Help-Seeking Behavior in Young Children

by

Lisa Marie Tully

Doctor of Philosophy in Psychology

University of California, San Diego, 2012

Professor Leslie J. Carver, Chair

This dissertation investigated whether different forms of praise could affect the latency of help-seeking in young children. Two forms of praise were investigated: person-praise and process-praise. Previous research found that process-praise led to greater task persistence than person-praise. In experiment 1, four-year-old children were asked to solve a series of wooden jigsaw puzzles. The children received either person-praise or process-praise upon solving the first four puzzles. The children were then provided with incorrect, yet highly similar puzzle pieces for two subsequent puzzles to create experiences of failure. Results replicated previous task persistence findings, however no effect on help-seeking was found. It was postulated that the



obviousness of providing incorrect puzzle pieces created inauthentic failure experiences.

Experiment 2 sought to tease apart the results from experiment 1 by using stimuli that created genuine failure experiences. Results revealed that person-praise reduced the latency to seek help compared to process-praise when children experienced genuine failures. In addition, experiment 2 examined the generalization of the task persistence findings by using stimuli that were different from those used when the children were praised. Results revealed that the effects of praise on task persistence did not transfer to dissimilar tasks.

Individual differences were also examined in both studies using parent reported temperament ratings. The temperament domain of effortful control moderated the influence of praise on help-seeking behavior in both studies. Results showed that the type of stimuli used influenced the interactions in different ways.

These findings were the first to suggest that praise could influence help-seeking behavior in young children, but only after experiencing genuine failures. We discussed possible implications this finding has on the interpretation of previous research and proposed future studies to further examine the possible influences of praise on young children's adaptive learning strategies.

## Chapter 1: General Introduction

As adults, we often encounter situations in which the solution exceeds our current knowledge base or skill set, similar to getting lost in a new part of town or not being able to program the DVR. In these situations, we must decide whether we will continue to struggle on our own, abandon the task, or simply find assistance. If we choose to continue to make attempts without assistance and ultimately give up, our goal is not met. Deciding to solicit help, on the other hand, may achieve our goals. It may also help develop skills to solve similar problems again in the future (Nelson-Le Gall, 1981, 1987; Newman, 1990). Help-seeking is a crucial part of learning across the life-span. This enables us to stay engaged in difficult tasks and enhance skill levels. But what factors determine whether or not we will ask for help? This question is particularly critical in early childhood, when the building blocks of learning are established (Shell & Eisenberg, 1992). A child who learns to read successfully at an early age, for example, will in turn enhance his ability to learn later on, when classroom instruction becomes more and more reading based.

So what determines whether or not a child will ask for help? How do we, as adults, influence this decision? The goal of this dissertation is to empirically investigate the influence of praise on help-seeking behavior in young children. This information will help guide adults' linguistic behavior to encourage optimal outcomes in young children.

Help-seeking is a valuable learning strategy when used correctly (Nelson-Le Gall, 1981). To be considered an adaptive tool, the timing of help-seeking must also

be considered. Asking for help too soon may hinder a child from developing new skills (Shell & Eisenberg, 1992). If a child asks for help quickly, she may miss opportunities to strengthen and expand her existing skill set. This behavior may reinforce a self-perception that one is not capable of completing difficult tasks, leading to learned helplessness (Dweck & Reppucci, 1973). The timing of help-seeking is a critical aspect of the learning process.

There is evidence that despite the benefits of asking for help, children do not seek help with the same frequency or latency (Benenson & Koulmazarian, 2008; Colman & Thompson, 2002; Thompson, 1999). What factors create these individual differences? Multiple factors, such as gender, goals, attachment, and previous experiences with help-seeking play a part in shaping a child's help-seeking behavior (Benenson & Koulmazarian, 2008; Coleman & Thompson, 2002; Thompson, 1999; Ryan & Pintrich, 1997). These factors also change and become more complex across development. Much research has focused on assessing internal cognitive factors in older children, such as goal orientation and attribution theory (Tanaka, Murakami, Okuno, & Yamauchi, 2002; Middleton & Midgley, 1997; Ryan & Pintrich, 1997; Elliot & Harackiewicz, 1996). Less attention has been paid to early environmental influences. The early parent/child relationship has long-term effects on help-seeking behavior (Coleman & Thompson, 2002). For example, four and five year old children with more secure attachments waited longer before explicitly seeking help on an easy task. Maternal scaffolding, feedback, and instruction, as well as the consequences of soliciting help, all influenced help-seeking behavior (Neitzel & Stright, 2003). Currently, however, there is no information on how subtle differences in linguistic

cues can alter help-seeking in young children. Parents agree that it is important to praise children and often deliver praise to their children (Dweck, 2002). Over the past decade, the topic of praise has received a great deal of attention in popular media. Despite this interest in praise, little is known about how subtle variations in this verbal information, which parents highly value, can influence children's learning strategies. This introduction will first explore evidence for children's help-seeking in problem-solving task. It will then examine individual variation in rates of help-seeking and the contributions of adult behavior. Next, evidence for the influence of praise on child behavior will be reviewed and the interplay of temperament dimensions will be discussed.

### **Young Children's Help-Seeking in Problem-Solving Tasks**

Throughout development, children are continually faced with challenges that go beyond their abilities. At these times, turning to someone more capable for help is the most beneficial strategy for success and learning. Newman (2000) and Nelson-Le Gall (1981) have defined the pieces that go into adaptive help-seeking in problem-solving situations and have identified when these abilities emerge throughout development. The first step is being cognizant of one's own ability and comparing that to the ability level that the task demands. It is necessary to be able to identify when a task exceeds one's own abilities in order to understand that it is appropriate and necessary to solicit help from a more capable other. The second step is understanding that others can aid in problem solving and in reaching one's goals. The

third step is developing behaviors that will successfully elicit the necessary help from others.

The development of the behaviors outlined above begins in infancy and continues to be refined throughout toddlerhood (Carpenter, Nagell, & Tomasello, 1998; Mosier & Rogoff, 1994; Goubet, 2006). Toward the end of the first year of life, infants become more goal oriented and are able to engage in intentional communication (Carpenter et al., 1998). They start to understand that others can help them reach their goals and increasingly recruit help when their independent attempts have failed (Mosier & Rogoff, 1994; Goubet et al., 2006; Elsner, 2009). There is evidence that between the age of 6 and 13 months, infants increasingly employ joint attention strategies or gestures towards their mothers as a means to solicit help from her (Mosier & Rogoff, 1994). The use of this type of instrumental help-seeking occurs more and more frequently throughout the second and third year of life (Benenson & Koulazarian, 2008; Goubet et al., 2006; Honig & Wittmer, 1985; Newman, 2000; Thompson & Moore, 1999). Two-year-old children demonstrate precursors to self-evaluations and appear to have some sense of when their ability level matches that demanded by a task and when it does not (Geppert & Küster, 1983; Kagan, 1981; Stipek, Recchia, McClintic, & Lewis, 1992). They understand that their successes and failures have social value and will express pride following achievement and frustration when they are unsuccessful in meeting their goal (Stipek et al., 1992). This frustration is also accompanied by greater amounts of help-seeking. A toddler is then sensitive to situational demands and is more likely to seek help in problem-solving situations than during free play (Benenson & Koulazarian, 2008; DeCooke &

Brownell, 1995). In sum, by their second birthday, toddlers develop the basic building blocks of adaptive help-seeking. They have a basic understanding of when assistance is required and have both the means and the willingness to solicit this help from others.

The acquisition of help-seeking skills follows a clear developmental trajectory as outlined above. Although similarities exist in the development of help-seeking skills, there are variations in the rate with which children actually use these skills (Schunk, 2005).

### **Individual Variation in Rates of Help-Seeking in Young Children**

Group level differences in help-seeking can be seen as early as three years of age (Benenson & Koulmazarian, 2008; Colman & Thompson, 2002; Thompson, 1999). Three- to six-year-old girls seek help more often and more quickly than do boys (Benenson & Koulmazarian, 2008; Thompson, 1999). Disadvantaged children also request help more rapidly compared to advantaged children (Benenson & Koulmazarian, 2008). There is evidence that individual variation exists as well (Butler, 1998; Dweck & Leggett, 1998; Newman, 1998; Middleton & Midgley, 1997; Elliot & Dweck, 1988).

In attempts to explain these individual variations, researchers have examined the influence of motivational factors on help-seeking in school-aged children. Goal orientation theory posits that children have different goals that motivate task-related behavior (Dweck & Leggett, 1998; Elliot & Dweck, 1988; Middleton & Midgley, 1997). Children with a task-goal orientation focus on mastering tasks and understand

effort as contributing to that mastery. Children with a performance-goal orientation focus on the self more than the task and are preoccupied with demonstrating ability. According to goal orientation theory, children who have a performance-goal orientation are concerned with appearing competent and will avoid behaviors (such as help-seeking) that may cause others to view them as low in ability. There is evidence that school-aged children with a performance-goal orientation are the least likely to request help (Butler, 1998; Newman, 1998), while having a task-goal orientation is a strong predictor of help-seeking (Middleton & Midgley, 1997). Another study found task-goal orientation was related to the perceived benefits of help seeking, which were positively associated with help-seeking in junior high students (Ryan & Pintrich, 1997). In terms of frequency, task-goal orientation is associated with greater help-seeking than performance-goal orientation.

How do these individual and group level differences arise? Researchers have suggested that the ability to ask for assistance first develops through early parent-child interactions (Newman, 2000; Puustinen, 1998).

### **The Contributions of Adult Behavior to Young Children's Help-Seeking**

The quality of the parent-child relationship has traditionally been measured in terms of attachment (Bowlby, 1969). Signs of attachment begin to emerge towards the end of the first year of life. Researchers have suggested that attachment is one of the most influential aspects of a child's development, having lasting direct and indirect effects even into adulthood (Green & Goldwyn, 2002; Lyons-Ruth, 2008; Smeekens, Riksen-Walraven, & van Bakel, 2007; van IJzendoorn, Dijkstra, & Bus, 1995; van

IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Securely attached children generally fare better in multiple domains, such as self-regulatory capacities and stress response levels, than insecurely attached or disorganized children (Kochanska, Philibert, & Barry, 2009; Morelius, Nelson, & Gustafsson, 2006; Gunnar, Brodersen, Nachmias, Buss, & Rigatuso, 1996; Hertzgaard, Gunnar, Erickson, & Nachmias, 1995; Spangler & Grossmann, 1993). Theoretically, attachment also contributes to learning, as securely attached children are able to use their caregivers as reliable bases from which they can explore and learn from their environment (Sroufe, 1988). This is associated with the frequency of help-seeking behavior as well. Securely attached four- to five-year-old children exhibit a longer latency to requesting help than insecurely attached children (Colman & Thompson, 2002; see Newman, 2000 for review). This is also seen in two-year-olds who were classified as securely attached at 18 months of age (Matas, Arend, & Sroufe, 1978).

In addition, the responsiveness of parents to their children's needs has been linked to the children's developing sense of control, one aspect of which is help-seeking (Rice, 1989). There is further evidence that parental warmth is related to help-seeking, although this effect was different for boys and girls (Puustinen, Lyyra, Metsäpelto, & Pulkkinen (2008). Girls whose parents who were more sensitive to their daughters' needs, demonstrated a longer mean thinking time before seeking help. The authors suggest that these girls were more self-confident and able to approach difficult problem-solving tasks more calmly. Newman (2000) also suggests that it is through the early parent-child relationship that children learn to be self-confident. This subsequently allows them to be able to approach difficult problem-solving



situations in an adaptive way. In addition, Wood (1989) suggests that parental discourse in particular is a crucial part of the process in which children learn to internalize strategies for self-regulation (i.e., questioning and help seeking). For example, kindergarteners and third graders whose parents presented instructions in small steps at an appropriate pace were more likely to solicit help from teachers in the classroom (Neitzel & Stright, 2003; Stright, Neitzel, Sears, & Hoke-Sinex, 2001).

Clearly the manner in which parents interact with children, both in terms of the language used and responsiveness to the child's needs and requests, has an impact on future help-seeking behavior. It is possible that parents may be further shaping their children's help-seeking behavior through even more subtle linguistic cues. There is evidence that subtle differences in how adults describe individuals can alter the way in which children view a character's ability (Heyman, 2008). School-aged children are also less likely to request help when a task is presented as a test of ability rather than as an opportunity to learn (Butler & Neuman, 1995). In this case, it is likely that presenting the task as a test of ability made children afraid of publicly demonstrating that they did not possess adequate ability by asking for help. It is possible that the words adults use when talking to children influences the likelihood that they will seek assistance.

In the recent decade, the concept of boosting children's self-esteem through praise has become a popular topic. Indeed, one survey found that 80% parents report that it is important to praise children in order for them to develop adaptive skills, such as self-confidence (Dweck, 2002). Since adults, specifically parents and teachers, have been encouraged to deliver and place an increasing emphasis on praise, it is

important to understand how different forms of praise can differentially influence the presence of adaptive behaviors, such as help-seeking.

### **The Differential Influence of Praise**

There is evidence that different forms of praise can alter children's goal orientation as well as level of task persistence (Kamins & Dweck, 1999; Mueller & Dweck, 1998). In a study by Mueller & Dweck (1998), fifth graders received either praise for their ability, which will be called person-praise ("You must be smart at these problems), or praise for their effort, which will be called process-praise ("You must have worked hard at these problems"), following a progressive matrices exercise. This praise followed the first set of matrices and acknowledgement of poor performance followed the second set of matrices. Children who received person-praise were more likely to endorse performance-goals relative to task-goals after experiencing setbacks on the second set of matrices. The authors suggest that person-praise may link good performance to high ability and thus change children's goal orientation by altering the attributions they make for their performance. Person-praise may also develop stable ability attributions for failure, in which poor performance is an indication of low ability. Children given person-praise were also more likely to indicate that they would not like to take the problems home to work on them, an indication of diminished task persistence.

Kamins and Dweck (1999) found similar results with kindergarteners. They delivered either person-praise (e.g., "You're really good at this") or process-praise (e.g., "You must have tried really hard") following a role-playing exercise. The

children experienced four success scenarios followed by two failure scenarios. During a subsequent survey, children who received person-praise were more likely to endorse items associated with a helpless orientation and indicate that they would not wish to work on the failure scenarios again in the future. Similar results were also found with four to five year old children (Cimpian, Arce, Markman, & Dweck, 2007). Children who received person-praise (e.g., “You are a good drawer”) were less likely to indicate that they would like to engage in the role-playing game in the future than children who received process-praise (i.e., “You did a good job drawing”).

While it is possible that the answers to these hypothetical questions asked of the children translate to real life behavior, direct measures of actual behavior are needed to truly understand this relationship. Only one study has used direct observation to examine the link between praise and task persistence (Corpus & Lepper, 2007). In this study, four to five year old children were given either neutral-praise, person-praise, process-praise, or product-praise (i.e., praise that focused on the outcome) after successfully solving two puzzles. They then experienced two failures in which they were not able to solve the puzzles. Finally, they were observed during free play in their preschool classroom an average of ten days later. Although all three forms of praise appeared to increase the amount of time children spent playing with puzzles compared to neutral praise, product- and process-praise significantly increased the amount of puzzle time compared to person-praise. This is further evidence that process-praise is associated with increased task persistence, with effects lasting even over a week.

In the real world, it is common for children to hear inconsistent praise types, which combine both person- and process-praise (i.e., “Good job, you’re so smart!”). One study found that as the proportion of process-praise increased, the children’s self-evaluations and persistence also increased (Zentall & Morris, 2010). In fact, the presence of any person-praise seemed to have a detrimental effect on persistence. In sum, these studies indicate that person-praise is associated with decreased task persistence. It is possible that this reduction in persistence is also associated with reductions in the latency of help-seeking behavior. Although increased task persistence is generally associated with optimal outcomes, how one’s time is spent during the persistence is also important (Nelson-Le Gall, 1990). Children who emit adaptive help-seeking behavior while engaged in a difficult task are more likely to enhance their skill set.

### **Timing of Help-Seeking behavior**

This dissertation endorses the perspective that help-seeking is an adaptive form of learning (Nelson-Le Gall, 1981). However, it has been shown that not all methods of help-seeking are beneficial. Selective help-seeking has been identified as the best way to enhance learning. Children who are adaptive help-seekers attempt to solve problems first, before soliciting help from others (Karabenick, 1998; Puustinen, 1998; Newman, 1994; Nelson-Le Gall, 1985). In this way, the latency of help-seeking is a crucial aspect of learning, as asking for help too soon during a task may hinder a child from developing new skills (Shell & Eisenberg, 1992). In previous research, help-seeking has been associated with good performance if it is paired with a long rather

than short reflection time before the onset of soliciting help (Puustinen, Kokkonen, Tolvanen, & Pulkkinen, 2004). Therefore, this paper will consider the latency of help-seeking as playing a key role in an adaptive learning strategy. Children with longer latencies to asking for help will be considered to demonstrate a more adaptive learning strategy. If process-praise does indeed increase task persistence, as evidence suggests, then it would also be expected to increase latency to help-seeking.

### **Temperamental Differences**

Temperament might also contribute to individual differences in help-seeking behavior as well as in responses to different praise forms. Researchers have suggested that temperament is stable from birth and describes the excitability of behavior (i.e., reactivity and self-regulation) (Rothbart & Bates, 2006). Children's reactions to social situations vary depending on their individual temperament (see Rothbart, Ahadi, & Hershey, for review). They both shape and are shaped by social interactions (Shiner & Caspi, 2003). Temperament can be measured with three broad dimensions: surgency, negative affect, and effortful control (Rothbart & Derryberry, 1981). Because negative affect and effortful control have been most closely linked to help-seeking and task persistence, this dissertation focused on these two dimensions.

The factor of negative affect targets the fear system, which is related to avoidance or inhibition of action in settings that are novel or potentially punishing. Children who are fearful have shown withdrawal and decreased interest in difficult tasks when evaluated by others (Harter, 1980). Since the current study involves feedback and evaluation, it is possible that children high in negative affectivity will

find the failure experiences in the current study more punishing than children low in negative affectivity. If this were the case, we would expect children high in negative affectivity to exhibit shorter latencies to help-seeking regardless of praise condition. It is also possible that these children will find the situation so aversive, that they will avoid asking for help or stop interacting with the experimenter altogether. One study found a positive correlation between negative affect and help-seeking using parent report measures (Rothbart et al, 1994). The current study will extend this research by combining temperament scores from the Child Behavior Questionnaire – Very Short Form (CBQ-VSF) (Putman & Rothbart, 2006) with direct measures of help-seeking to examine this connection.

The dimension of effortful control is related to emotion regulation and the ability to suppress a dominant response to perform a subdominant response (Posner & Rothbart, 2000). Children who score high in effortful control demonstrate more persistence, which has been linked to greater academic competence (Bramlett, Scott, & Rowel, 2000). In addition, it is possible that adult behavior may moderate the influence of temperament on child behavior. The literature suggests that parenting practices have the greatest effect on children at risk for poor outcomes due to poor effortful control (see, Rothbart & Bates, 2006, for review). It is possible that children with certain temperaments, such as those who score low on effortful control, may respond more to praise than those with more resilient temperaments. Given evidence reviewed above that any amount of person-praise lessens task persistence, it is possible that children who are low on effortful control will be more susceptible to person-praise and demonstrate shorter latencies to help-seeking than children who are

high on effortful control. If this is the case, the differential effects of praise will only be seen as moderated by temperament.

### **The goal of this dissertation**

The goal of this dissertation was to investigate whether different forms of praise affect the adaptive nature of help-seeking behavior by changing latency of onset. In order to assess the influence of praise, we employed a similar paradigm that has been used in previous research (Cimpian et al., 2007; Kamins & Dweck, 1999). Children experienced four successes followed by two failures. After each success, the child was given either person-praise or process-praise and failures were simply acknowledged. The child was then presented with additional challenging tasks and given the opportunity to ask for help. This is the first study to examine the influence of praise on direct measures of help-seeking behavior.

We hypothesized that a) person-praise will be associated with shorter help-seeking latencies compared to process-praise, b) person-praise will also be associated with decreased task persistence, and c) temperament will moderate the influence of praise, with children low in effortful control demonstrating a greater differential response to praise.

## **Chapter 2: Praise influenced children's task persistence.**

In this experiment, puzzle-solving was used to examine how praise effected task persistence and help-seeking and the possible moderating influence of effortful control. Children ages 48 to 60 months ( $N = 39$ ) experienced four successful trials of solving puzzles and received either person-focused or process-focused praise. The children then experienced two unsuccessful trials in which they were unable to solve the puzzles. The children were then presented with a more challenging puzzle and were given the opportunity to solicit help from either the experimenter or their caregivers. Participants who received person-focused praise demonstrated a shorter duration of task-persistence than participants who received process-focused praise. Latency to help-seeking remained unchanged. However, an interaction between effortful control and response to praise was found. Children who were low in effortful control exhibited a differential response to praise, while those who were high in effortful control did not.

### **Introduction**

The aim of the present experiment was to examine whether praise would influence the onset of help-seeking and the duration of task persistence on a familiar task. A majority of parents believe that praise is an important way to increase self-confidence and other adaptive skills (Dweck, 2002). Since praising children is being encouraged more and more in our society, it is important to understand the behaviors that different forms of praise may elicit. Previous research has shown that person



praise and process-praise have differential effects on children's task persistence (Zentall & Morris, 2010; Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999). A majority of the research has used pretend-play tasks in which children used puppets to draw pictures with pipe cleaners. Children who received person-praise were less likely to express a desire to work on the same task in the future than were children who received process-praise (Cimpian et al., 2007; Kamins & Dweck, 1999). Similarly, children who received process-praise on a real puzzle task demonstrated increased task persistence in the form of spending more time playing with puzzles than playing with other toys during free play one week later (Corpus & Lepper, 2007). There is further evidence that when children receive multiple types of praise, the presence of any person-praise decreases task persistence (Zentall & Morris, 2010).

Task persistence is an important learning strategy that has been linked to academic achievement (Ready, LoGerfo, Burkam, & Lee, 2005; Leondari, Syngollitou, & Klossenoglou, 1998). However, it is important to consider what happens during the time when a child is persisting (Nelson-Le Gall, 1990). Task persistence that is aimless is likely to not be as beneficial as task persistence that is accompanied by additional learning strategies, such as adaptive help-seeking behavior. Requesting help from a more knowledgeable other allows a child to expand upon her existing skill set and increases the likelihood of solving similar problems in the future (Nelson-Le Gall, 1981, 1987; Newman, 1990). Soliciting help can also enhance a child's ability to stay engaged in a difficult task. Thus, it is important to examine help-seeking in addition to task persistence when evaluating children's learning

strategies, since both tools work in synchrony and augment the benefits of each. Currently, no data exist on the effects of praise on young children's efforts to solicit assistance. To truly understand the potential differential benefits of praise on children's adaptive learning strategies, one must also examine how praise may be influencing help-seeking behavior in young children.

In addition, we wished to explore the possible influences of individual differences as measured by temperament. Temperament describes the excitability of behavior and can be measured with three broad dimensions: surgency, negative affect, and effortful control (Rothbart & Derryberry, 1981). It can both shape and be shaped by social interactions, leading to differential responses to environmental experiences (Shiner & Caspi, 2003; Wachs, 1991). Since children's responses to situations are dictated in part by their temperament, it is useful to consider temperament when examining child behavior. The two dimensions of temperament that are most interesting to the current experiment are negative affect and effortful control.

Negative affect is linked to the fear system and relates to a child's avoidance of novel or potentially punishing situations, particularly situations that involve evaluation. Children who are high in negative affect are thought to be more likely to seek help as a way to escape or end an uncomfortable situation. Rothbart and colleagues (1994) found a positive correlation between negative affect and help-seeking using parent report on the Child Behavior Questionnaire and on a questionnaire about help-seeking. In the current experiment, we asked children to complete tasks while in the presence of a stranger (i.e., the experimenter) and their caregiver. This was a novel situation that created a sense of evaluation. We expected

children high in negative affect to demonstrate a greater frequency of and shorter latency to help-seeking during baseline.

Effortful control relates to the ability to inhibit dominant responses in favor of emitting more socially acceptable subdominant responses (Posner & Rothbart, 2000). Effortful control has been linked to task persistence, with children high in effortful control demonstrating greater amounts of persistence and subsequently greater academic achievement (Bramlett et al., 2000). We expected that low effortful control would be correlated with shorter durations of task persistence during the baseline measure. In addition to contributing to general levels of behavior, the temperament dimension of effortful control has been shown to interact differentially with social experiences. In general, children high in effortful control demonstrate lower emotional and behavioral problems and higher social competence and self-esteem. These children tend to be resilient when exposed to poor environments. Children low in effortful control, on the other hand, are more responsive to parenting practices (Hastings, Sullivan, McShane, Coplan, Utendale, & Vyncke, 2008; van Leeuwen, Mervielde, Braet, & Bosman, 2004). Due to this greater sensitivity to environmental circumstances, we hypothesized that children low in effortful control would demonstrate a greater response to praise types than children high in effortful control.

Recent literature suggests that process-praise increases children's preference for that task (Zentall & Morris, 2010; Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999). We wished to extend these findings by examining whether it also altered the duration of time that a child was willing to work on a given task. Although preference for a task will likely increase the amount of time a child is

willing to work on that task, this had not been directly measured. A majority of previous work has measured task persistence using child-report (Zentall & Morris, 2010; Cimpian et al., 2007; Kamins & Dweck, 1999), which may or may not accurately reflect real-life behavior. A more reliable measure of task persistence was found in one study that did use direct measures (Corpus & Lepper, 2007). This study praised children during a puzzle task and then measured the total length of time children choose to manipulate puzzles as compared to other items when given a choice among several toys. Since direct measures of behavior are optimal for truly understanding real world behavior, the current experiment also utilized puzzles as stimuli and used direct measures of task persistence. Since children are often asked to work on a particular task at school (e.g., a math problem), we believe it is useful to define task persistence as length of time spent on one task, rather than simple preference.

### **Method**

Experiment 1 employed the same paradigm used in previous research (Cimpian et al., 2007; Kamins & Dweck, 1999), wherein, participants first experienced four successes followed by two failures. Children received either person-praise or process-praise in response to the successes while the failures were simply acknowledged. Previous findings indicated that the all praise forms had similar effects while children were succeeding and differential effects were only apparent once failure was experienced. Two failure experiences were necessary since children usually viewed only one unsuccessful experience as a fluke (Kamins & Dweck, 1999).

Subsequently, participants were presented with a challenging puzzle and had the opportunity to solicit help from the experimenter.

We chose to test four-year-old children since this was the youngest age at which children in previous research have been shown to be sensitive to praise forms. In experiment 1, we used puzzles, since previous research has shown an effect of praise with these stimuli (Corpus & Lepper, 2007). We sought to replicate previous findings that praise can influence task persistence and then extend these findings by including measures of help-seeking. We expected four-year-olds to show a shorter duration of task persistence as well as a shorter latency to seek help after receiving person-praise as compared to process-praise. We also expected that this effect would be seen more strongly in children who are low in effortful control than those children who are high in effortful control.

**Participants.** Participants were thirty-nine children ages 48 to 60 months ( $M = 51.5$  months, female  $N = 19$ ). The sample was 67% white, 28% of mixed ethnicity, 3% African American, and 3% declined to state. All children had been born within 2 weeks of their due date and had no history of complications at birth or throughout development.

**Stimuli.** Nine jigsaw puzzles were used as stimuli. These stimuli were presented to children in both praise groups. The six training puzzles were created specifically for this project. The one demonstration puzzle and two testing phase puzzles were commercially available puzzles. The training puzzles were colourful six-piece fully-interlocking wooden puzzles set in individual frames (see Appendix, Figure 1). Pilot testing showed that these puzzles were within the ability level of most

four-year-olds. Each training puzzle had a modified version in which two puzzle pieces were replaced with incorrect but highly similar puzzle pieces, making the puzzle unsolvable (see Appendix, Figure 2). Following Corpus & Lepper (2007), a Xeroxed picture of each solved puzzle was made. This was shown to children so that they understood what the completed puzzle looked like. It was then hidden from the children's view while they were solving the puzzles to prevent them from seeing that they had been given incorrect pieces during the unsuccessful puzzles. The testing phase was divided into two parts; the Help-Seeking Testing Phase and the Persistence Testing Phase. The Help-Seeking Testing Phase was designed to measure help-seeking behaviour and the Persistence Testing Phase was designed to measure task persistence. The testing puzzle used in the Help-Seeking Testing Phase was a commercially available 48-piece puzzle that was presented without a frame (see Appendix, Figure 3). This puzzle was chosen through piloting because most four-year-olds could solve some, but not all, of this puzzle without help. The puzzle used in the Persistence Testing Phase was conceptually challenging and consisted of small colourful pieces that fit together in a spiral pattern (see Appendix, Figure 4). For each participant, one puzzle was presented during the demonstration. Four of the six training puzzles were presented during the Training Phase without modifications ("successful puzzles") and the remaining two training puzzles were presented with modifications ("unsuccessful puzzles"). The six training puzzles were presented in an order that was counterbalanced across participants, i.e., the puzzles that were modified to be unsuccessful rotated with each participant.

## **Procedure**

This experiment used a between-subjects design. Nineteen children were in the person-praise group and 20 children were in the process-praise group. The first experimenter (E1) was with the child during the Training Phase and the Persistence Testing Phase and was not allowed to assist the children during either phase. The second experimenter (E2) conducted the Help-Seeking Testing Phase and was allowed to provide help. Having a second experimenter helped to ensure that the child would not be discouraged from seeking help purely based on the rules of training procedure in which they did not receive help if they asked.

Each participant visited the lab with a parent, and was given an opportunity to engage in a series of puzzle tasks that were designed to be conceptually but not physically challenging. Each child was instructed to sit on the floor with the two experimenters, while the caregiver was taken into the experiment room to give consent. Together, E1 and E2 carried out a brief child-controlled warm-up involving toys unrelated to the experimental puzzles. This warm-up ended when children appeared comfortable with the experimenters. When the warm up concluded, E1 brought the child into the experiment room and E2 entered a side room. The caregiver was already present and seated in the experiment room and remained in this position throughout the experiment. The child was instructed to sit on the floor, next to the seated caregiver. E1 sat on the floor in front of the child. A large curtain was to the left of E1. All the stimuli were kept behind the curtain, out of sight, and pulled out one at a time. Each stimulus was placed behind the curtain again when not in use (see

Appendix, Figure 5 for a schematic illustration of testing room set-up) (see Appendix, Figure 6 for an outline of the procedures). During consent, caregivers were instructed to refrain from making comments to their child and to respond to requests for help with the phrase: “I don’t know how that works.”

**Baseline Measure.** The session began with a baseline measure of task persistence and help-seeking. A shallow basket containing five small stuffed animals was placed in front of the child. Each animal had a small magnet sewn inside of it. E1 then took out a wooden fishing rod that had a magnet attached to the end of the string and demonstrated how to “fish” one of the animals out of the basket. The child was then given the fishing rod and asked to get all of the animals out of the basket. One of the animals had taped wrapped around its magnet. In this way, the animal would rise slightly when touched with the magnet on the fishing rod, but ultimately the magnet was not strong enough to lift the animal out of the basket (see Appendix, Figure 7). E1 used a stopwatch and began timing after she handed the fishing rod to the child. The baseline measure ended when the child either announced that she was finished, simply took all of the animals out of the basket using her hands, or five minutes had elapsed.

**Demonstration Phase.** E1 introduced the “puzzle game” by bringing out the demonstration puzzle and demonstrating how to solve it.

**Training Phase.** The Training Phase then began in which E1 presented the child with the four successful puzzles followed by two unsuccessful puzzles. Each puzzle was presented one at a time. For each presentation, the empty tray and the Xeroxed picture were placed side-by-side in front of the child. E1 then pointed to the picture



while saying: “This puzzle is a picture of (name of picture). Look, (description of picture)! Solve it!” (see Appendix, Table 1 for scripts used). E1 then pulled out a cookie sheet with the six puzzle pieces scattered around and placed it on top of the Xeroxed picture so that the picture was no longer visible. When the child solved the puzzle, E1 delivered person-praise (“Yay, you did it! You are a good puzzle-solver!”) to children in the person-praise group and process-praise (“Yay, you did it! You did a good job solving the puzzle!”) to children in the process-praise group. E1 used a stopwatch to measure the time it took the child to solve the puzzle. E1 then presented the two unsuccessful training puzzles, one at a time. The duration of time that the child was allowed to manipulate the unsuccessful puzzles was individualized using the average latency to solving the four successful puzzles. However, the trial was ended early if the child placed four correct pieces in and then began to try to fit in an incorrect piece. This was done in an attempt to prevent the child from seeing that two puzzle pieces clearly would not fit. When the individualized time had elapsed, E1 removed the puzzle from the child and acknowledged that the child had not solved the puzzle (“The puzzle is not finished. You did not solve the puzzle.”). This two simple sentence phrasing approximated that used by Cimpian and colleagues (2007). E1 then left the room and E2 entered and the Help-Seeking Testing Phase began.

**Help-Seeking Testing Phase.** During the Help-Seeking Testing Phase the child was given an opportunity to solve a challenging puzzle. The purpose was to determine whether the child would emit any spontaneous help-seeking behavior. E2 only provided help if the child directly asked either E2 or her caregiver for help. If the child did not directly ask for help after four minutes had elapsed, E2 said, “I can help you

solve the puzzle” and solved the puzzle. E2 then left the room and E1 entered to begin the Persistence Testing Phase.

**Persistence Testing Phase.** In the Persistence Testing Phase the child was given the opportunity to solve another complex puzzle. The purpose of the Persistence Testing Phase was to determine whether the child’s task persistence had changed as a result of the praise received during the Training Phase. E1 demonstrated the task to the child while saying: “Here is another puzzle. I can put this piece here.” E1 then presented the child with the rest of the pieces said: “Put all the pieces together and let me know when you are finished.” E1 then turned slightly away from the child and pretended to read some papers. Just as in experiment 1, E1 did not help the child. If the child asked for help, E1 repeated the instructions. The trial was ended after the child stated that she was finished, abandoned the test stimuli for at least 15 seconds, or after five minutes had elapsed.

**Debriefing.** After the Persistence Testing Phase, E1 debriefed the child, first by acknowledging that the puzzle was too hard to finish. E1 then apologized for giving the child such a hard puzzle. E1 then further debriefed the child by modifying the unsuccessful puzzles so that they could be solved, presenting the child with the puzzles again, and providing positive feedback once the child solved each puzzle.

### **Coding**

Two independent coders who were blind to the experimental hypotheses were trained on recordings of pilot data. Twenty-eight percent of the tapes were coded by both coders to determine a measure of intercoder-reliability. Cohen’s Kappa ( $\kappa$ ) as a measure of the agreement between the two coders was 1.00 for total help-seeking

statements. Percent agreement was .91 for latency to help-seeking statements, .85 for duration of task persistence during the baseline fishing game and the Persistence Testing Phase, and .95 for duration of exposure to both unsuccessful puzzles during the Training Phase.

### **Dependent measures**

**Help-seeking.** Definitions of help-seeking were created to capture behavior that would typically elicit a help-giving response from an adult in the real world. The target of a child's help-seeking attempts could be either the experimenter or the child's caregiver. Three types of statements were identified: direct help-seeking, indirect help-seeking, and inability statements. Direct help-seeking was defined as statements in which the child explicitly requested help (e.g., "Can you solve this?"; "I need help"; "You do it") with or without making eye contact. Indirect help-seeking was defined as statements in which the child indicated that the puzzle might be broken (e.g., "It doesn't fit"; "It's broken"; "It won't work"). Inability statements were defined as vocalizations that expressed an inability or unwillingness to complete the task based on negative self-evaluations ("This is too hard (for me)"; "I can't solve it"; "I don't know how"). Indirect help-seeking statements and inability statements were only coded if the child made eye contact in order to ensure that the child was not merely talking to himself. These separate categories were created to assist in coding and then were combined for final analyses.

Total help-seeking was recorded as whether or not children made any help-seeking statements during the baseline, during each of the two unsuccessful puzzles in

the training phase, and during the two testing puzzles in the Help-Seeking Testing Phase.

The timing of help-seeking behavior was recorded as seconds between the presentation of the puzzle and the onset of any type of help-seeking verbalization. This time was recorded for the baseline, for each of the two unsuccessful puzzles in the training phase, and for the two testing puzzles in the Help-Seeking Testing Phase. This measure was of interest as children's latency to seek help is part of an adaptive learning strategy.

Because experience with the experimenters' initial responses to the children's help-seeking attempts (i.e., not being given help) might influence subsequent help-seeking regardless of praise type, we also analyzed responses made during the two unsuccessful puzzles. Latency to seek help during each of the unsuccessful puzzles was analyzed separately. In sum, help-seeking was measured during baseline, the two unsuccessful puzzles during the Training Phase, and during the Help-Seeking Testing Phase (see Appendix, Table 2 for list of when help-seeking was measured).

**Task persistence.** Task persistence was recorded in seconds from receipt of the fishing rod in the baseline measure and from placement of the puzzle on the floor in the Persistence Testing Phase to the children's announcement that they were finished, the onset of abandonment of the stimuli for at least 15 seconds, or after five minutes had elapsed (see Appendix, Table 3 for list of when task persistence was measured).

**Temperament.** Caregivers were asked to complete the Children's Behavior Questionnaire – Very Short Form (CBQ-VSF). This is a 36-item questionnaire which measures children's temperament on three scales: surgency, negative affect, and

effortful control (Putman & Rothbart, 1996). The three scales show adequate internal consistency with previously reported coefficient alphas ranging from 0.66 to .70 for negative affect, and 0.62 to .078 for effortful control (Putman & Rothbart, 1996). In the current sample, coefficient alphas were 0.78 for negative affect, and 0.69 for effortful control, indicating adequate internal consistency. Caregivers were asked to rate their child's reaction in the past 6 months to 36 situations on a 7-point likert scale. Items used for the negative affect scale included situations such as "gets quite frustrated when prevented from doing something s/he wants to do," "tends to be sad if family's plans don't work out," and "is very difficult to soothe when s/he has become upset." Items used for the effortful control scale included situations such as "prepares for trips and outings by planning things s/he will need," "notices when parents are wearing new clothing," and "is good at following directions." Each of the three scale scores is derived by calculating the mean of 12 items scored on the 7-point response scale. Values for each scale ranged from 1 (low) to 7 (high).

Children were placed into "low" and "high" groups for both negative affect and effortful control scales. The median score for negative affect was 4.00 and the median score for effortful control was 5.33. Children with scores at and below the median were placed in the "low" groups and children above the medians were placed in the "high" groups. In the entire sample, 21 children were in the low negative affect group and 20 children were in the low effortful control group.

## Data-analysis

Our a priori hypotheses were that if children were sensitive to different forms of praise, they should be more likely to ask for help (referred to as total help-seeking), as well as ask for help more quickly after receiving person-praise as compared to children who received process-praise. Children should also show a shorter duration of task persistence after receiving person-praise. We conducted a Chi-square analysis for total help-seeking and separate between-groups ANOVAs for timing of help-seeking and duration of task persistence.

We also predicted that negative affect would be related to a baseline measure of help-seeking, with children higher in negative affect being more likely to ask for help in addition to asking for help more quickly. We expected children low in effortful control to show a greater sensitivity to praise than those high in effortful control. The relationship between negative affect and help-seeking was assessed using a Chi-square analysis and an independent-sample *t* test, respectively. Separate two-way between-groups ANOVAs were used to test whether effortful control moderated the influence of praise on help-seeking and task persistence.

## Results

**Baseline measures.** We first ran independent-sample *t* tests to determine whether the two praise groups differed in terms of “puzzle” skills (as measured by the individualized time allowed for the unsuccessful puzzles), temperament, or baseline measures of help-seeking and task-persistence. The two praise groups were not significantly different in the individualized times for the first unsuccessful puzzle,

$t(37) = 0.047, p > .05$  ( $M = 102.8, SD = 9.8$  vs.  $M = 102.2, SD = 9.6$ ), or the second unsuccessful puzzle,  $t(37) = -0.599, p > .05$  ( $M = 90.1, SD = 9.4$  vs.  $M = 98.0, SD = 9.2$ ). The praise groups were not significantly different on the temperament scale of negative affect,  $t(37) = 0.78, p > .05$ , or effortful control,  $t(37) = -0.81, p > .05$ . The groups were not significantly different on the baseline measure of total help-seeking,  $\chi^2(1, 39) = 0.94, p > .05$ , latency of help-seeking,  $t(26) = -0.60, p > .05$  or task persistence,  $t(36) = -1.27, p > .05$ .

**Help-seeking scores.** Total help-seeking scores were determined for each of the following puzzles: first and second unsuccessful puzzles and the testing Phase 1 puzzle. During each of the three puzzles, between 23 – 67% of the 39 children asked for help. Chi-square analyses revealed no main effect of praise type on whether children asked for help during any of these three opportunities,  $\chi^2(1, 39) = 0.22, p > .05$ ,  $\chi^2(1, 39) = 0.03, p > .05$ ,  $\chi^2(1, 39) = 0.11, p > .05$ , respectively.

Between-groups ANOVAs were used to compare the mean latency of help-seeking of each of the two praise groups on each of the three puzzles. There was no effect of praise type on the latency of help-seeking on any of the three puzzles,  $t(7) = 0.069, p > .05$ ,  $t(15) = 0.15, p > .05$ ,  $t(21) = -0.78, p > .05$ , respectively.

**Task Persistence scores.** To determine whether praise type had an effect on duration of task persistence, a between-groups ANOVA was conducted. Children who received process-praise persisted longer on the final puzzle task than those who received person-praise,  $F(1, 37) = 4.00, p = .05$  (see Figure 2.1). This effect held up when controlling for baseline measures of task persistence,  $F(1, 37) = 3.86, p = .05$ .

**Temperament.** A chi-square analysis was used to examine whether negative affect contributed to baseline differences in total help-seeking. There was no effect of negative affect on total help-seeking during baseline,  $\chi^2(1, 39) = 1.68, p > .05$ . An independent-sample *t*-test revealed that negative affect did not contribute to baseline latency of help-seeking,  $t(25) = -1.19, p > .05$ . Data-analysis of baseline task persistence revealed that effortful control did not contribute to differences in task persistence,  $t(37) = -0.10, p > .05$ . Baseline latency of help-seeking did not differ between children low in effortful control ( $M = 89.1, SD = 67.1$ ) or high in effortful control ( $M = 89.0, SD = 22$ ) (see Figure 2.2).

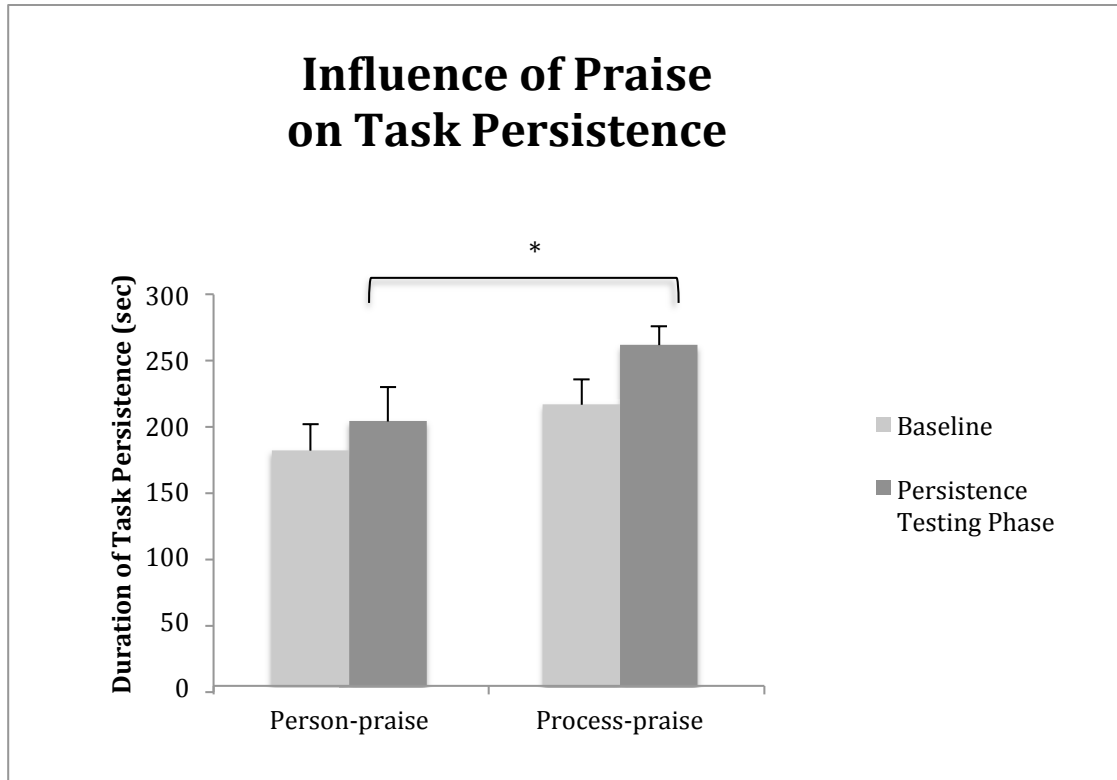
To determine whether effortful control moderated the effect of praise on the latency of help-seeking, a two-way between-groups ANOVA was conducted. One outlier was excluded since it was more than 2.5 standard deviations above the mean latency of help-seeking. There was a significant interaction of Effortful Control x Praise Type during the second unsuccessful puzzle,  $F(3,16) = 6.86, p < .05$  (see Figure 2.3).

Further analyses were conducted to determine the direction of the effect during the second testing puzzle. First, we examined whether children in the same effortful control group responded differently to the two forms of praise. Simple effects tests revealed that children who were low in effortful control and who received process-praise demonstrated a greater latency to help-seeking than children who were low in effortful control and received person-praise,  $F(3,12) = 5.25, p < .05$ . Children who were high in effortful control did not demonstrate a significant difference in latency to help-seeking based on praise type received,  $F(3,12) = 2.04, p > .05$ . In sum, a

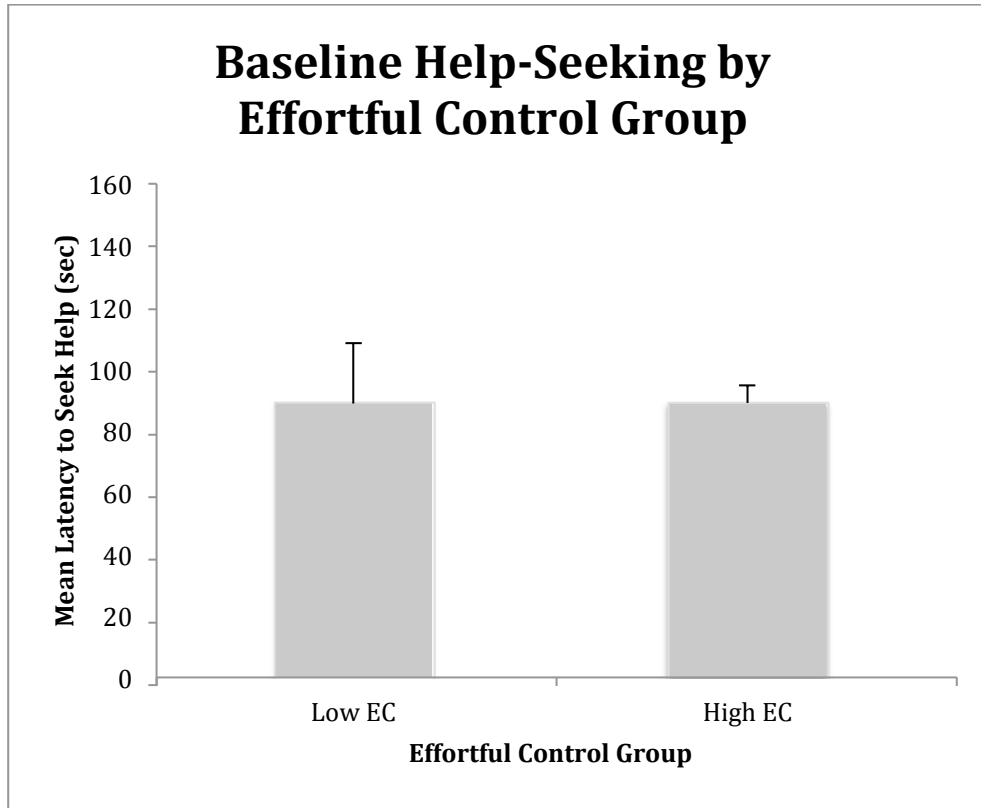


differential response to praise was found in children who were low in effortful control, but not in children who were high in effortful control.

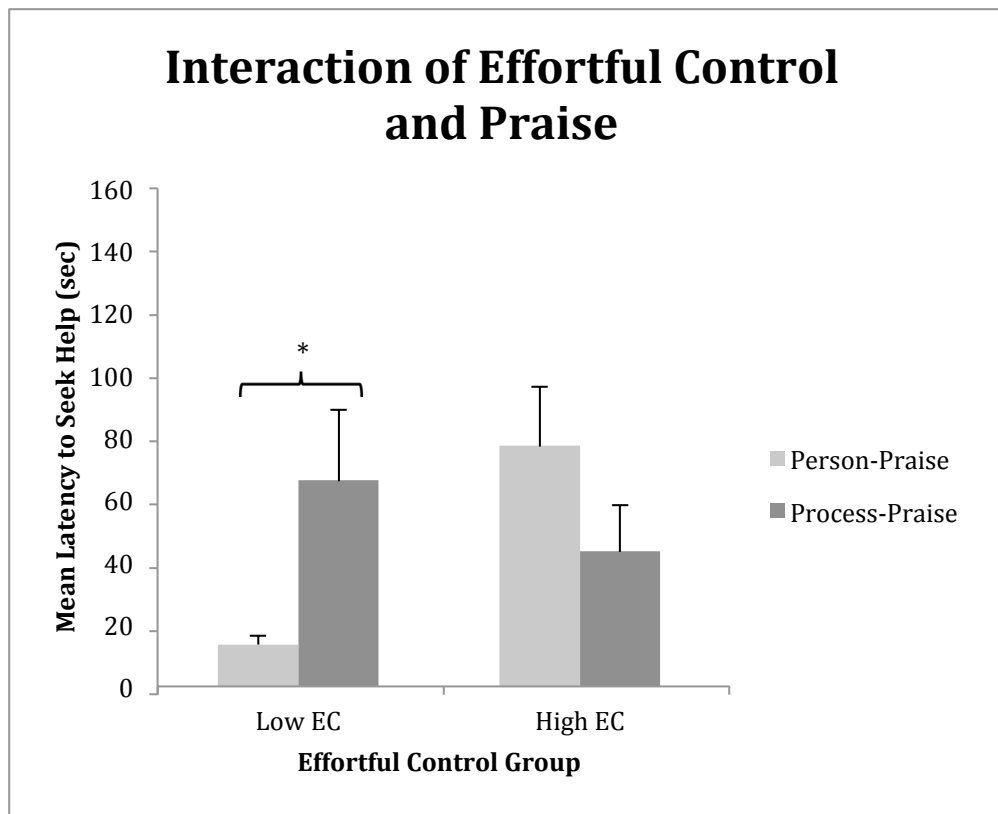
There was no significant interaction of praise and effortful control on the final measure of task persistence,  $F(3,16) = 0.04, p > .05$ .



*Figure 2.1* Experiment 1: The influence of praise types on task persistence during the Persistence Testing Phase. No difference was found between groups on task persistence during baseline. Children who heard process-praise persisted for significantly longer during the Persistence Testing Phase, than children who heard person-praise.  $* < .05$ .



*Figure 2.2* Latency to seek help during baseline task by effortful control group. No difference was found between children low in effortful control or high in effortful control on this measure.



*Figure 2.3* Experiment 1: The interaction of effortful control on the influence of praise types during the second unsuccessful puzzle.  $* < .05$ .

## Discussion

The results suggest that different forms of praise do not influence help-seeking behavior, but do influence task persistence. At baseline, there was no difference in task persistence, however children who received person-praise gave up more quickly than those who received process-praise during a final measure of task persistence. This supports the secondary hypothesis that process-praise leads to greater task persistence in children compared to person-praise.

The current experiment replicated previous findings that process-praise can increase task persistence. It also extended this previous literature that defined task persistence solely in terms of preference (Cimpian et al., 2007; Corpus & Lepper, 2007) but using measures of duration. This previous work measured task persistence with either questioning about hypothetical situations (e.g., “If you had a chance to do something tomorrow, would you [do this task] or would you do something else?”) (Cimpian et al., 2007) or direct observation of task choice (e.g., duration of time child spent with one task versus other available tasks) (Corpus & Lepper, 2007). The current experiment defined task persistence as duration of time spent attempting to complete a challenging task. This is the first experiment to directly measure how long a child actually persists at a task that she is asked to complete, rather than measuring her preference for the task. Since children are often asked to work on one specific task in school (e.g., a math problem), it is important to measure how long a child will actually persist on a given task.

Contrary to our hypothesis, latency to help-seek did not differ between the groups on either of the two training puzzles or on the testing puzzle. Designing

modifications for the puzzles that allowed the children to fail without detecting that they had been deceived was challenging. Some children correctly placed three or four pieces under their average completion time. They then discovered that they had been tricked upon trying to place the fourth or fifth piece, which clearly would not fit into the puzzle. Indeed, this was why the guidelines for the individualized times of the unsuccessful puzzles were created. Despite our efforts to conceal the trick, it is possible that some children, depending on which pieces they correctly placed first, figured out that they had been given incorrect pieces. Since previous research has used either blatantly fake failures (e.g., pretend tasks in which no real failure was possible) or puzzles similar to those used in the current experiment, it appears that deception is not necessary for praise to activate differential task persistence responses. However, it is likely this paradigm of obvious deception may not set up a valid real-world analog for examining help-seeking behavior.

A critical component of help-seeking is evaluating the characteristics of a potential helping partner (Newman, 2000). By age four, children are able to track the reliability of a social-learning partner and sometimes adjust their level of trust accordingly (Scofield & Behrend, 2008). If some children discovered that they had been deceived, this would likely have weakened their trust in the experimenter and potentially influenced the likelihood and timing with which they would request help. And even though another experimenter was brought in for the Help-Seeking Testing Phase, it is possible that trust in the whole situation had already been broken. Therefore, praise may influence help-seeking following failure experiences that are more genuine.

Temperament dimensions of negative affect and effortful control had no influence on baseline measures of help-seeking or task persistence, but effortful control moderated the association between praise and help-seeking. Children in the high and low effortful control groups had almost identical latencies to request help during baseline. However, by the second unsuccessful puzzle, a differential response to praise emerged. Children low in effortful control who received person-praise sought help much more rapidly than those who were low in effortful control and received process-praise. Children high in effortful control, on the other hand, did not have a significantly different response to praise types.

This supports the hypothesis that children who were low in effortful control would have a greater response to praise than those who were high in effortful control. Children high in effortful control generally have lower emotional and behavioral problems and higher social competence, empathy, and self-esteem (see Kiff, Lengua, & Zalewski, 2011, for review). Due to this resilient profile, children high in effortful control tend to have good outcomes regardless of the type of environment in which they are raised. Conversely, children low in effortful control have more adjustment problems in general and seem to benefit from parenting that is high in support or positivity (Hastings et al., 2008; Van Leeuwen et al., 2004). It would follow that environmental influences, in the form of differences in praise, would more greatly impact children low in effortful control.

In summary, four-year-old children's task persistence on real tasks can be manipulated through praise with process-praise leading to longer durations of task persistence than person-praise. Help-seeking behavior is very sensitive to the child's

appraisal of available help-giving partners. Due to this, it is important to consider the validity of failure manipulations when measuring the effects of praise on help-seeking.

It is also possible that seeking help is unrelated to the receipt of praise. Since greater amounts of task persistence do not necessarily coincide with more adaptive help-seeking behavior (Nelson-Le Gall, 1990), it is possible that these strategies are operating under different motives. Praise has been used to prime children to think about success in terms of effort rather than innate ability (Kamins & Dweck, 1991). This priming may relate more to the amount of effort (i.e., time) that a child is willing to put into a challenging task than to their willingness to ask for help. Whether children ask for assistance may be more reflective of their desire to be connected versus independent. Benenson and Kounazarian (2008) suggest that shorter latencies to help-seek may be associated with cooperative problem-solving strategies. It is possible that persistent behavior is associated with attributing success to effort, while longer latencies to seek help are associated with the desire to work independently.

The next experiment sought to further examine this finding by using stimuli that could be modified in a much more inconspicuous way. This will allow for a more clear understanding of the influence of praise on help-seeking in young children. In addition, we were interested in exploring the generalizability of the effects of praise on task persistence. Parents often use praise to achieve more global effects, such as overall increased self-esteem and confidence. One survey found that more than 80% of parents believed praise was needed for children to feel good about themselves (Dweck, 2002). It is important to know if praise really can work in this way, wherein praise on one task will influence the child's behavior on other tasks. To examine this,



the next experiment included a measure of task persistence using stimuli that was different from stimuli used during the Training Phase.

### **Chapter 3: Praise influenced children's help-seeking in realistic failures.**

#### **Summary**

Children ages 48 to 51 months ( $N = 40$ ) experienced four successful trials of “finding” a toy hidden inside of a prop and received either person-focused ( $N = 20$ ) or process-focused praise ( $N = 20$ ). The children then experienced two unsuccessful trials where they were unable to find the hidden toy. The children were then presented with two additional problem-solving props and were given the opportunity to solicit help from either the experimenter or their caregivers. Children who received person-focused praise demonstrated a shorter latency to seek help than children who received process-focused praise. These findings are the first evidence that the latency of help-seeking behavior in young children can be influenced by linguistic cues from adults.

#### **Introduction**

In experiment 1 we established that person-focused praise resulted in a shorter duration of task persistence in four-year-old children. No change in latency to seek help was found. This could be due to the fact that an obvious modification was used and children were able to see that they had been given incorrect puzzle pieces. During the unsuccessful puzzles, some children placed the modified pieces on top of the puzzle in what would be the correct position and then silently stared at the examiner. This was reflected in the fact that 72% of children asked for help during the baseline measure and only 43% asked for help during the second unsuccessful puzzle. This created a confound in which children appeared to detect that the unsuccessful puzzles

were clearly impossible while others did not. To create an experience of failure that was more equal among the participants, the current experiment employed novel problem-solving props that included easy-to-hide modifications for the unsuccessful trials during the Training Phase. This prevented all of the children from discovering the experimenter's deception and made the unsuccessful trials more equally realistic.

Receiving different forms of praise has been consistently associated with changes in task persistence (Zentall & Morris, 2010; Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999). These studies, as well as our experiment 1, measured task persistence using tasks similar to those used when the children were praised. To test the generalizability of the effect of praise, the current experiment measured task persistence using a task that was dissimilar to those used during the Training Phase. We wanted to understand the limits of the effect of praise and whether behaviors in multiple domains would be influenced.

Experiment 1 used a puzzle task similar to that used in previous research (Corpus & Lepper, 2007), which replicated those task persistence findings and then explored its relation to help-seeking. Since the help-seeking results may have been confounded by the obviousness of the modifications used during the unsuccessful trials, the current experiment used problem-solving props with inconspicuous modifications. This helped to tease apart the results from experiment 1 to better determine whether praise can actually influence help-seeking behavior. The final Persistence Testing Phase used a task that was dissimilar to the ones used during the Training Phase to test the generalizability of the effect of praise on task persistence. We hypothesized that children who received person-praise would seek help more

quickly than children who received process-praise. We also expected that praise would generalize to dissimilar tasks and children who received person-praise would exhibit diminished task persistence as compared to children who received process-praise. Once again, we measured temperament and expected children low in effortful control to be more greatly affected by praise than those who were high in effortful control.

### Methods

**Participants.** Participants were 40 children age 48-51 months ( $M = 49$  months, 2 days). The majority of children were white (% 81) and 20 girls participated. All children had been born within 2 weeks of their due date and had no history of complications at birth or throughout development.

**Stimuli.** Ten props were used as stimuli. Four of the props were specifically designed for this project and six were used in previous studies (see Appendix, Figure 8). Nine of the props were created for “the finding game.” These props required two steps to “solve” the prop by obtaining an attractive toy hidden inside (e.g., placing a stick on a train and then pushing the train towards a box to release a toy clown) (see Appendix, Figure 9). One “finding game” prop was used in the Demonstration Phase. Six “finding game” props were used during the Training Phase. “Finding game” props used during the Training Phase included an inconspicuous modification, which when used, made it impossible for four-year-olds to retrieve the toy hidden inside (see Appendix, Figure 10). These training props could be solved by the children without the modifications and could not be solved with the modifications.

Two testing phases were used; the Help-Seeking Testing Phase targeted help-seeking behaviour and the Persistence Testing Phase targeted task persistence. The two “finding game” props used during the Help-Seeking Testing Phase (see Appendix, Figure 11). These “finding game” props were more challenging and required the assistance of the experimenter to solve. The prop used during the Persistence Testing Phase was dissimilar to the “finding game” props. A string and five wooden beads were used as the stimuli for the Persistence Testing Phase. One bead was used as a demonstration and the remaining four were presented to the child. Three of the beads had holes the size of the string and one had a hole just smaller than the string (see Appendix, Figure 12).

### **Procedure**

The procedure was similar to that used in experiment 1, with a few adjustments.

**Baseline Measure.** The warm-up and baseline measure were identical to that used in experiment 1.

**Demonstration Phase.** Once the child was seated in front of the first experimenter (E1), she introduced the “finding game” by bringing out the demonstration prop and demonstrating how to “find” the toy that was hidden inside.

**Training Phase.** In the Training Phase, E1 presented the child with the four successful training props, one at a time, while saying: “There’s a (name of toy) in here. Find it!” When the child found the toy, E1 delivered either person-praise (“You found the \_\_\_! You are a good finder!”) or process-praise (“You found the \_\_\_! You did a good job finding!”). E1 used a stopwatch to measure the time it took the child to

find each toy. These four times were averaged to create an individual solve time. E1 then presented the two unsuccessful training props, one at a time. E1 allowed the child to manipulate the unsuccessful props for his individual solve time plus 15 seconds. This time was used to prevent the child from feeling that finding the prop was clearly impossible but allow the child to feel that he had adequate time to find the toy. When the individualized time had elapsed, E1 removed the prop and acknowledged that the child had not found the toy (“The (name of toy) is still in here. You did not find it.”).

Four of the six training props were presented during the Training Phase without modifications (“success props”) and the remaining two training props were presented with modifications (“unsuccessful props”). The six training props were presented in an order that was counterbalanced across participants, thus the props that were modified to be unsuccessful rotated with each participant.

**Help-Seeking Testing Phase.** The Help-Seeking Testing Phase followed a similar procedure to that used in experiment 1, except two testing props were used to provide more opportunities for help-seeking. The Help-Seeking Testing Phase began as E1 exited the room and E2 entered. The two testing props were presented in an order that was counterbalanced across participants. The latency, in seconds, to ask for help was timed. Again, E2 only provided help if the child directly asked either E2 or her caregiver for help. If the child did not directly ask for help after four minutes had elapsed, E2 said, “I can help you find the toy” and solved the prop.

Expected anomalies did occur. On two occasions, a child was able to solve one of the testing props without assistance. At those times, E2 simply acknowledged that the toy had been found (“There’s the \_\_\_\_!”), but provided no other feedback. If

the child did not solve the toy and did not directly ask for help after four minutes had elapsed, E2 said “I can help you find the (name of toy)” and solved the prop.

**Persistence Testing Phase.** The Help-Seeking Testing Phase was followed by the Persistence Testing Phase in which the child was given the challenge to place a string through some beads. This was to determine whether the child’s task persistence had changed from baseline as a result of the praise received. The Persistence Testing Phase began when E2 left the room and E1 re-entered the room.

E1 demonstrated the task to the child while saying: “Watch me put this bead on this string!” E1 then presented the child with the three additional beads and said: “It’s your turn. You put these beads on the string! Let me know when you are finished.” E1 then turned slightly away from the child and pretended to read some papers. The hole of one of the three beads was too small to allow the string to pass through it, making it impossible for the child to complete the task. Since this testing session targeted task persistence, E1 did not help the child. If the child asked for help, E1 repeated the instructions. The trial was ended when the child stated that he was finished, abandoned the test stimuli for at least 15 seconds, or after five minutes had elapsed.

**Debriefing.** After the Persistence Testing Phase, E1 debriefed the child, first by acknowledging that one of the beads was too small and could not fit on the string. E1 then apologized for giving the child the wrong bead. E1 then further debriefed the child by modifying the unsuccessful props so that they could be solved, presenting the child with the props again, and providing positive feedback once the child solved each prop.

## **Coding**

Two independent coders who were blind to the experimental hypotheses were trained on recordings of pilot data. Each tape was coded by both coders to determine a measure of intercoder-reliability. Cohen's Kappa ( $\kappa$ ) as a measure of the agreement between the two coders was .95 for total help-seeking statements. Percent agreement was .83 for latency to help-seeking statements, .90 for duration of task persistence during the baseline fishing task and the Persistence Testing Phase, and .96 for duration of exposure to unsuccessful props during the Training Phase.

## **Dependent measures and Data analysis**

Dependent measures and data-analysis in experiment 2 were identical to those of experiment 1 (see Appendix, Table 1 and 2 for lists of when help-seeking and task persistence were measured). Temperament was again measured using the CBQ-VSF. In the current sample, coefficient alphas were 0.74 for negative affect and 0.83 for effortful control.

Again, children were placed into "low" and "high" groups for negative affect and effortful control scales. The median of negative affect was 4.06 and the median for effortful control was 5.60. Children with scores at and below the median were placed in the "low" groups and children above the medians were placed in the "high" groups. In the total sample, 22 children were in the low negative affect group and 23 children were in the low effortful control group.



## Results

**Baseline measures.** We first ran independent-sample  $t$  tests to determine whether the two praise groups differed in terms of “finding” skills (as measured by the individualized time allowed for the unsuccessful props), temperament, or baseline measures of help-seeking and task-persistence. The two praise groups were not significantly different in the individualized times for the first,  $t(37) = -0.801, p > .05$  ( $M = 88.3, SD = 38.1$  vs.  $M = 99.0, SD = 45.0$ ), or second,  $t(36) = -1.28, p > .05$  ( $M = 75.1, SD = 28.9$  vs.  $M = 90.6, SD = 43.4$ ), unsuccessful props.

The praise groups were significantly different on the temperament scale of negative affect only,  $\chi^2(1, N = 40) = 3.70, p = .05$ . There were significantly more children high in negative affect in the process-praise group ( $N = 12$ ) than in the person-praise group ( $N = 6$ ) (see Table 3.1). Due to this, negative affect was controlled for in the remaining analyses when appropriate. When controlling for negative affect, the groups were not significantly different on the baseline measures of latency of help-seeking,  $F(2,20) = 1.92, p > .05$ , or task persistence,  $F(2,39) = 2.50, p > .05$ .

**Help-seeking scores.** Total help-seeking scores were determined for the first and second unsuccessful props of the Training Phase and the two testing props of the Help-Seeking Testing Phase. A range of 53 – 77% of the 40 children asked for help during these prop presentations. Chi-square analyses revealed no main effect of praise type on whether children asked for help during any of these four opportunities,  $\chi^2(1, N = 40) = 0.06, p > .05$ ,  $\chi^2(1, N = 40) = 0.36, p > .05$ ,  $\chi^2(1, N = 40) = 0.62, p > .05$ , and  $\chi^2(1, N = 40) = 0.09, p > .05$ , respectively.

Between-groups ANOVAs were used to compare the mean latency of help-seeking of the two praise groups on each of the four props. There was one outlier during the first unsuccessful prop that was more than three standard deviations above the mean onset of help-seeking. This outlier was excluded, although there was no main effect on praise seeking during the first unsuccessful prop with or without this outlier,  $F(2,22) = 1.22, p > .05$ . There was a significant effect of praise type on the latency of help-seeking during the second unsuccessful prop when negative affect was controlled,  $F(2,22) = 4.79, p < .05$ . Children who received process-praise ( $M = 59.1, SD = 47.9$ ) had a longer latency to ask for help than children who received person-praise ( $M = 25.5, SD = 14.5$ ) (see Figure 3.1).<sup>1</sup>

**Task Persistence scores.** To determine whether praise type had an effect on duration of task persistence, a between-groups ANOVA, controlling for negative affect, was conducted. There was no effect of praise on duration of task persistence on the string and bead task,  $F(2,37) = 0.94, p > .05$ .

**Temperament.** Chi-square analyses were used to examine whether negative affect contributed to baseline differences in total help-seeking. Negative affect predicted whether children asked for help during the baseline measure,  $\chi^2(1, N = 40) = 4.12, p < .05$  (see Figure 3.2). Contrary to the hypothesis, children rated as low in negative affect were more likely to ask for help during a baseline task. Independent-sample *t*-tests revealed that negative affect did not contribute to baseline latency of help-seeking,  $t(20) = -0.31, p > .05$ . Data-analysis revealed that effortful control did

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<sup>1</sup> Reported means were not controlled for negative affect. The uncontrolled effect was similar,  $F(1,23) = 5.42, p < .05$ .

not contribute to differences in baseline levels of task persistence,  $t(39) = 0.85, p > .05$ . In addition, baseline latency of help-seeking did not differ between children low in effortful control ( $M = 88.3, SD = 58.3$ ) or high in effortful control ( $M = 93.5, SD = 44.2$ ) (see Figure 3.3).

To determine whether effortful control moderated the effect of praise on the latency of help-seeking, a two-way between-groups ANOVA was conducted. Again, one outlier was excluded on the first unsuccessful testing prop since it was more than three standard deviations above the mean latency to seek help. There was a significant interaction of Effortful Control x Praise Type during the second testing prop,  $F(4,26) = 7.29, p < .05$  (see Figure 3.4).

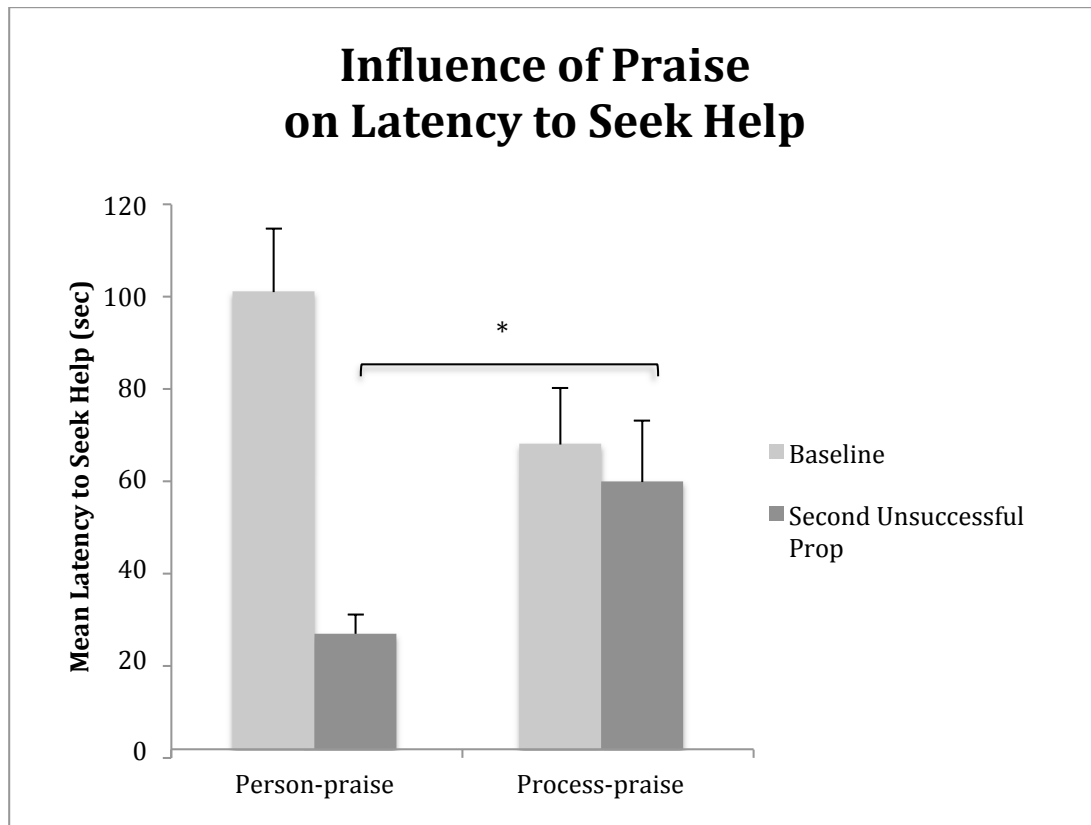
Further analyses were conducted to determine the direction of the effect during the second testing prop. First, we examined whether children in the same effortful control group responded differently to the two forms of praise. Simple effects tests revealed that children who were high in effortful control and who received process-praise demonstrated a greater latency to help-seeking than children who were high in effortful control and received person-praise,  $F(1,26) = 6.85, p = .01$ . Children who were low in effortful control did not demonstrate a significant difference in latency to help-seeking based on praise type received,  $F(1,26) = 1.54, p > .05$ . In sum, a differential response to praise was found in children who were high in effortful control, but not in children who were low in effortful control.

There was no significant interaction of praise and effortful control on the final measure of task persistence,  $F(2,37) = 0.94, p > .05$ .

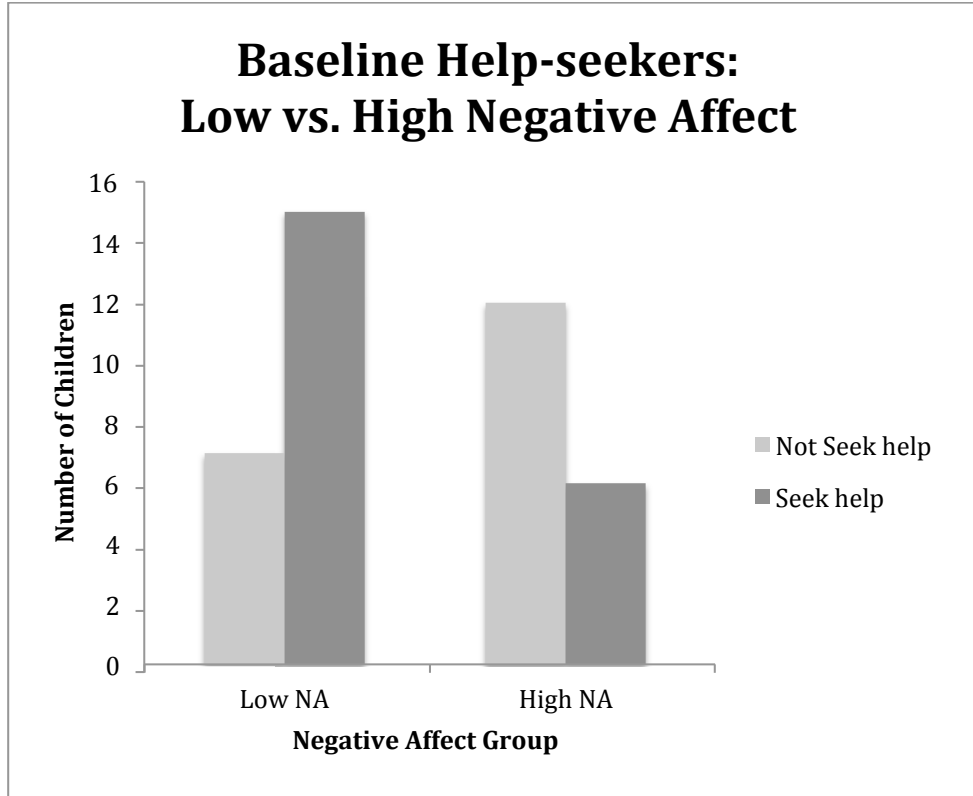
Table 3.1

*Experiment 2: Number of children in each praise group rated as low or high in negative affect (NA).*

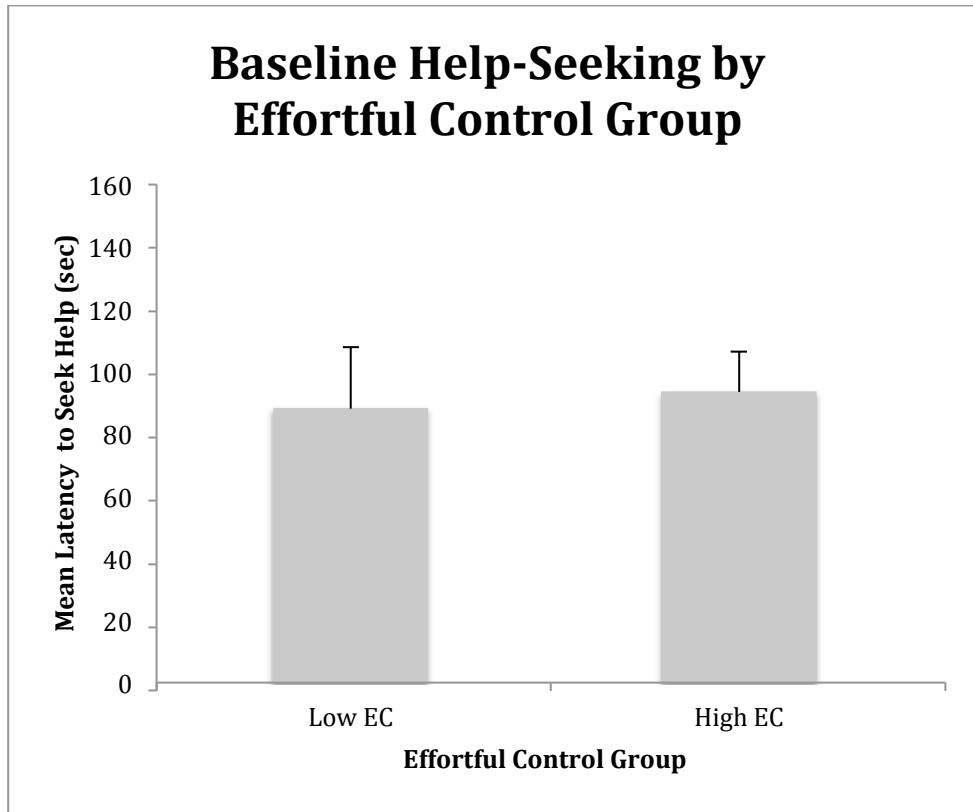
<u>Praise Group</u>	<u>Low NA</u>	<u>High NA</u>
Person-praise	14	6
Process-praise	8	12



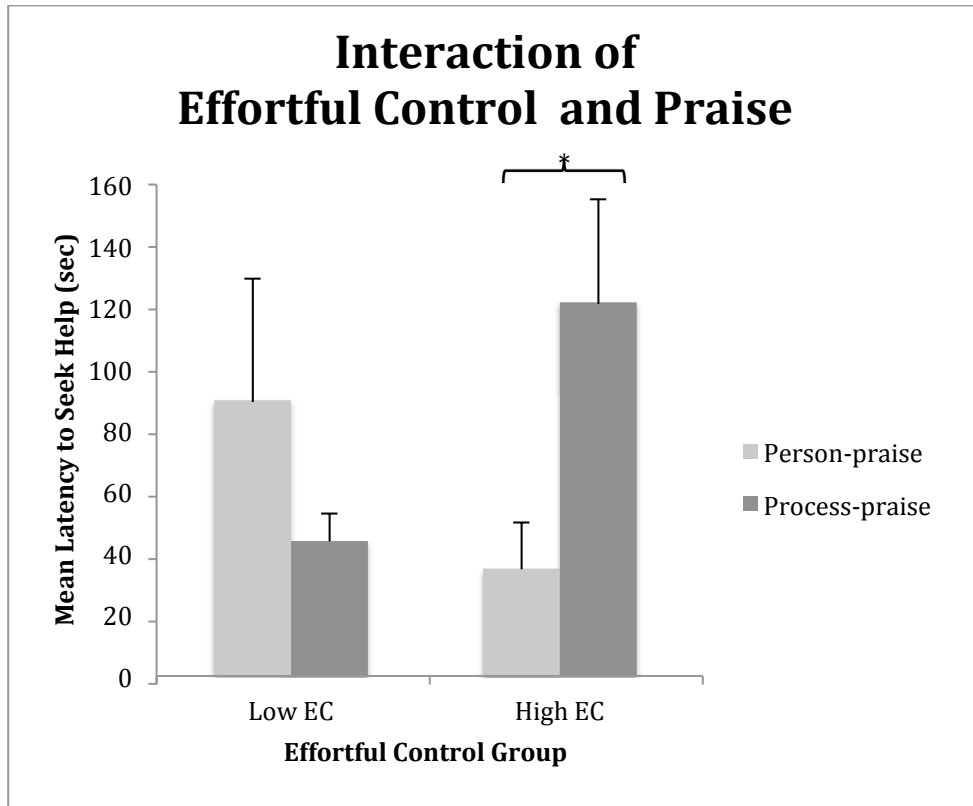
*Figure 3.1* Experiment 2: Influence of praise on latency to seek help during the second unsuccessful prop of the Training Phase. \*  $p < .05$ . Note: The means represented in this graph are not controlled for negative affect.



*Figure 3.2* Experiment 2: Number of children who sought help during baseline who were rated as low in negative affect or high in negative affect.



*Figure 3.3* Experiment 2: Latency to seek help during baseline task by effortful control group. There was no difference between children low in effortful control or high in effortful control on this measure.



*Figure 3.4* Experiment 2: The interaction of effortful control on the influence of praise types during the second testing prop of the Help-Seeking Testing Phase. Note: The means represented in this graph are not controlled for negative affect.



## Discussion

Experiment 2 revealed that different forms of praise influenced help-seeking behavior on problem-solving tasks when modifications negating task completion were not obvious. At baseline, both praise groups demonstrated similar latencies to request help. But after hearing person-praise in the four successes, children were quicker to seek help on the modified props than children who received process-praise. This supported the principal hypothesis that person-praise would shorten children's latency to seek help compared to process-praise.

Interestingly children exhibited differential influence of praise only during the second unsuccessful prop. Possibly, children were unaware of impending failure during the first unsuccessful prop, since up to that point, they were consistently successful. In addition, children's solicitations for help went unrewarded during the first and second unsuccessful prop, which perhaps influenced them to not seek help during the first testing prop. Similarly, all children received help on the first testing prop regardless of whether or not they asked for help, which perhaps also encouraged children to seek help more quickly, irrespective of praise condition. Hence, the second unsuccessful prop provided the clearest opportunity to measure help-seeking in response to praise. In support of this, Kamins and Dweck (1999) found that children needed to experience two failures before the differential effects of praise were seen. Since the second unsuccessful prop happened after the initial activation of praise and before a new situation was set up, this situation would show the strongest effect of praise.

Contrary to our hypothesis, the effects of praise during the “finding game” did not generalize to the final string and bead task. Past research used tasks that were identical to the ones used when praising the children (Cimpian et al., 2007; Corpus & Lepper, 2007). The current experiment found no evidence that the effects of praise on one task will transfer to other types of tasks. Previous research found that labeled praise in which children were told explicitly what they did right (e.g., “Good job at cleaning up the blocks!”) was more effective in changing behavior than unlabeled praise (e.g., “Good job!”) (Bernhardt & Forehand, 1975). This can be viewed as evidence that simple praise does not transfer between tasks and children need to be praised specifically for each task individually in order for a change in behavior to be made. Our results extend this finding by demonstrating that behavioral changes evoked by different forms of labeled praise (e.g., person- or process-praise) also do not generalize to other behaviors. The lesson learned is that parents and educators should be very specific when praising children to effectively promote change. Specifically, it may be most beneficial to focus on using process-praise during a child’s individual areas that need improvement.

The temperament dimension of effortful control was found to moderate the association between praise type and latency of help-seeking during the second testing prop. At baseline, children who were rated as either low in effortful control or high in effortful control showed no difference in the onset of requests for help. However, after receiving praise four times, only children who were high in effortful control showed a differential response to praise. Children high in effortful control who heard process-praise maintained a long latency to help-seeking, while those who received

person-praise asked for help much more quickly. Children low in effortful control showed no differential effect of praise. This goes against the hypothesis, which stated that the influence of praise would be observed more strongly in those children rated as low in effortful control.

Children high in effortful control are marked by their capacity to focus their attention, inhibit impulses, and derive pleasure from low-intensity stimuli (Rothbart, 2007). In particular, high effortful control is related to the ability to approach a situation that is feared and resist the influence of affective states (Rothbart & Hwang, 2005). Help-seeking could be viewed as one method of escaping a potentially unpleasant situation (i.e., failing at a task while being evaluated by a stranger). Possibly, the eventual effects of person-praise were so upsetting to children, that even high levels of effortful control did not protect them from attempting to end the task as quickly as possible by seeking help. Cimpian and colleagues (2007) reported that person-praise elicited strong negative emotions from children, such as greater reports of being sad. In addition, since the modifications of the props used in this experiment were well hidden, this experiment created much more consistent experiences of failure than in experiment 1. This indicated that when children were faced with very real experiences of failure process-praise can be protective, but only in children who were also high in effortful control. The interaction patterns on during the first and second unsuccessful props, as well as during the first testing prop, did not reach significance, however, the pattern was in the same direction. This effect most likely slowly built up over time.

In sum, praise could influence the latency of help-seeking, only if first activated by realistic experiences of failure. The effects of task persistence did not generalize. Effortful control moderated the influence of praise on the latency of help-seeking. In a situation where failure was very real and tasks were novel and extremely challenging, high effortful control did not buffer the effects of receiving person-praise.

## Chapter 4: General Discussion

This set of experiments investigated whether praise can differentially influence the onset of help-seeking behavior in addition to the duration of task persistence in young children. Experiment 1 found that person-praise decreased the duration of task persistence as compared to process-praise. This finding supports and extends previous research that found that person-praise decreased hypothetical and real preference for tasks (Cimpian et al., 2007; Corpus & Lepper, 2007). Duration of persistence may be a more useful measure of task persistence. In academic settings, children are often not given a choice between tasks, but instead required to work on one particular task (e.g., math problems or reading). Experiment 2 examined whether the effects of task persistence can be generalized to other dissimilar tasks. Results provide evidence that the effects of praise on one task do not transfer. This falls in line with other research that found labeled praise is more effective in changing behavior than unlabeled praise (Bernhardt & Forehand, 1975). Taken together, children must be specifically praised on individual tasks in order for a change in behavior to be observed.

Although a longer duration of task persistence is generally ideal, it is not necessarily beneficial in and of itself. It is important to consider how children are spending their time while working on a task (Nelson-Le Gall, 1990). Sticking to a difficult task for a longer period may only be useful if children are concurrently employing adaptive help-seeking behaviors. It is critical to consider whether praise influences help-seeking behavior in conjunction with task persistence. Although process-praise appears to be more beneficial for increasing task persistence, previous research has not examined how this praise might influence help-seeking behavior.

The timing of requesting help is another important aspect of an adaptive learning strategy. Understanding the contributions of praise on help-seeking behavior is crucial when evaluating the merits of different praise forms.

Experiment 2 found that children who received person-praise had a shorter latency to the onset of help-seeking than children who received process-praise during a problem-solving task. This is the first evidence that subtle linguistic cues can influence the use of adaptive help-seeking in four-year-old children. In experiment 1, we used stimuli (i.e., puzzles) similar to that used in previous research (Corpus & Lepper, 2007). Using these stimuli, no effect of praise on the latency of seeking help was found.

The stimuli used in experiment 1 differed from that used in experiment 2 in an important way. The modifications used to make the props unsuccessful in experiment 2 were inconspicuous, while those used in experiment 1 were much more obvious. Therefore, it is possible that a greater number of children in experiment 1 understood that the experimenter had deceived them and was asking them to complete an obviously unsolvable task. Previous research created failure experiences that were obvious to the children, such as pretend role-playing with puppets in which only pretend failure is possible (Cimpian et al., 2007) and real puzzles with incorrect pieces (Corpus & Lepper, 2007). The successful creation of a genuine failure experience does not appear to be necessary in order for praise to influence task persistence. However, requesting help from another person is a very social act that involves evaluating potential help-giving partners (Newman, 2000). It is possible that children who understood that they had been deceived in experiment 2 and no longer viewed the

experimenters as reliable sources. Alternatively, children may have believed that asking for help would be useless since solving the puzzle was clearly impossible. Over half of the children simply remained silent during the second unsuccessful puzzle in experiment 1. It is also possible there was confusion as to what is the appropriate response to the situation. Since the realness of the failure experience was more controlled in experiment 2 and an effect on help-seeking was found, it is likely the obviousness of the deception in experiment 1 interfered with the influence of praise, leading to a null effect.

Previous research has also neglected to take individual differences into account when evaluating praise. Temperament is generally thought to be stable from birth and can be measured with three broad domains: surgency, negative affect, and effortful control (Rothbart & Derryberry, 1981). It is considered to be both shaped by and differentially responsive to social interactions (Caspi, 2003; Wachs, 1991). The temperament domain of effortful control, in particular, is associated with differential responsiveness to parenting (see Kiff, Lengua, & Zalewski, 2011, for review). Children high in effortful control appear to be more resilient and less influenced by parenting practices, while children low in effortful control benefit from parenting that is highly supportive (Hastings, et al., 2008; Van Leeuwen et al., 2004). It was hypothesized that children low in effortful control would show a greater differential response to praise than would children high in effortful control. Parents in both studies rated their children's temperaments and the children were then divided into low and high effortful control groups. Both experiment 1 and experiment 2 found an interaction between praise group and effortful control. Experiment 1 revealed that

children who were low in effortful control demonstrated a differential latency to help-seeking based on the type of praise received, while children high in effortful control showed similar latencies to help-seek regardless of praise received. Experiment 2 showed the opposite effect with only children high in effortful control demonstrating a differential response to praise.

In experiment 1, a combination of low effortful control and person-praise appeared to greatly decrease mean thinking time before seeking help, whereas the help-seeking latency of all other children appeared to hover just below baseline levels of help-seeking. The results from experiment 1 fall in line with previous research that suggests that children low in effortful control are more susceptible to environmental influences (Hastings, et al., 2008; Van Leeuwen et al., 2004). It is also supported by evidence that any amount of person-praise can have detrimental effects on other outcome measures, such as task persistence (Zentall & Morris, 2010). Results from experiment 1 suggest that being high in effortful control can buffer a child from the negative effects of receiving person-praise during a familiar task.

The combination of being high in effortful control and receiving process-praise appeared to increase the mean thinking time before a child asked for help in experiment 2. All other children remained at or below baseline levels of help-seeking latencies. It may be that high effortful control provides a protective effect, but only in combination with process-praise, when all children have a genuine failure experience. This effect was only seen after multiple experiences of real failures.

Taken together, these results suggest that process-praise is always beneficial to children high in effortful control and is generally neutral for children low in effortful



control. Person-praise, on the one hand is either neutral or detrimental for all children, depending on the situation. In situations where children may be aware that they are being deceived, person-praise reduces the latency of help-seeking for children low in effortful control. In situations where a child repeatedly has real failure experiences, help-seeking latency is reduced only for children high in effortful control.

These findings have important implications for future research and call into question the use of imaginary situations to substitute for more true to life experiences. Previous research has relied heavily on self-report, which may not translate into real-life behavior. It is critical to use direct measures of actual behavior when studying child development. It is also critical to evaluate the methods used in previous literature. Providing children with incorrect, yet highly similar puzzle pieces does not create a real sense of failure since many children are able to identify that the pieces are incorrect. Manipulating the realness of the failure experience by altering the salience of the modifications of the unsuccessful props, drastically changed the results between experiment 1 and 2. Given that all previous findings of the effect of praise on task persistence were found using artificial failure experiences, it is possible that this effect may not hold up in a real life situation. It is critical that future research take into account how well the experimental context can be translated into real life situations.

Previous research has focused mainly on task persistence when evaluating the merits of different forms of praise (Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999). However, duration of persistence in and of itself is not necessarily indicative of an adaptive learning strategy. It is important to also consider how the child is spending her time (Nelson-Le Gall, 1990). Future research should

always include measures of adaptive help-seeking in conjunction with measures of task persistence in order to truly understand the benefits of different forms of praise.

### **Future Directions**

The results of these studies suggest several possible avenues for future research. It is important to follow up experiment 2 with a replication that measures task persistence using a task similar to the ones during which the children were praised. This will shed light on the contributions of genuine failure experiences on the effects of praise on task persistence.

It is possible that the familiarity of the task rather than the understanding of the deception drove the results of experiment 1. Finding familiar stimuli that can be modified in inconspicuous ways will help tease apart the help-seeking findings of experiment 2. This could have important implications for how adults introduce new tasks to children.

Other questions of interest include whether children are more prone to develop certain motivation orientations based on their temperament. Goal orientation theory posits that children have different goals that motivate task-related behavior (Dweck & Leggett, 1998; Elliot & Dweck, 1988; Middleton & Midgley, 1997). Children with a task-goal orientation focus on mastering tasks and understand effort as contributing to that mastery. Children with a performance-goal orientation focus on the self more than the task and are preoccupied with demonstrating ability. It may be that children high in effortful control are more likely to have a task-goal orientation, as both are linked to greater task persistence (Rothbart & Hwang, 2006; Dweck & Leggett, 1998).

Therefore children are high in effortful control may naturally understand success to be reflective of effort, which might lead to their greater willingness to persist at challenging tasks.

This set of studies is the first to show that praise can influence the latency of help-seeking behavior when presented with a genuine failure experience. It also showed that individual differences in temperament could moderate the effects of praise. In addition, it showed that the specific effects of temperament appear to be mediated by differences in stimuli. Together the current and future projects promise to inform us about how young children's adaptive learning strategies can be shaped with subtle linguistic cues.

APPENDIX



**“boy”**



**“submarine”**



**“elmo”**



**“tiger”**



**“big bird”**



**“simba”**

Figure A.1: Set of puzzles used in experiment 1.

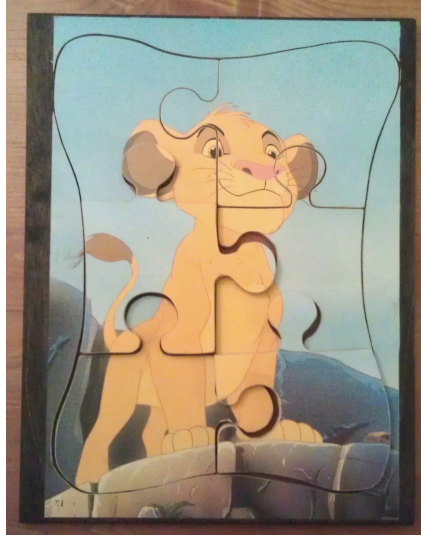


Figure A.2: Modification of successful puzzle to make it an unsuccessful puzzle during Training Phase in experiment 1.



Presented to children in pieces



Completed puzzle

Figure A.3: Testing puzzle used in the Help-Seeking Testing Phase of experiment 1.

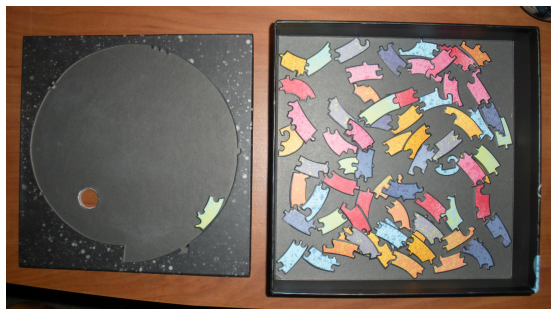


Figure A.4: Testing puzzle used in the Persistence Testing Phase of experiment 1.

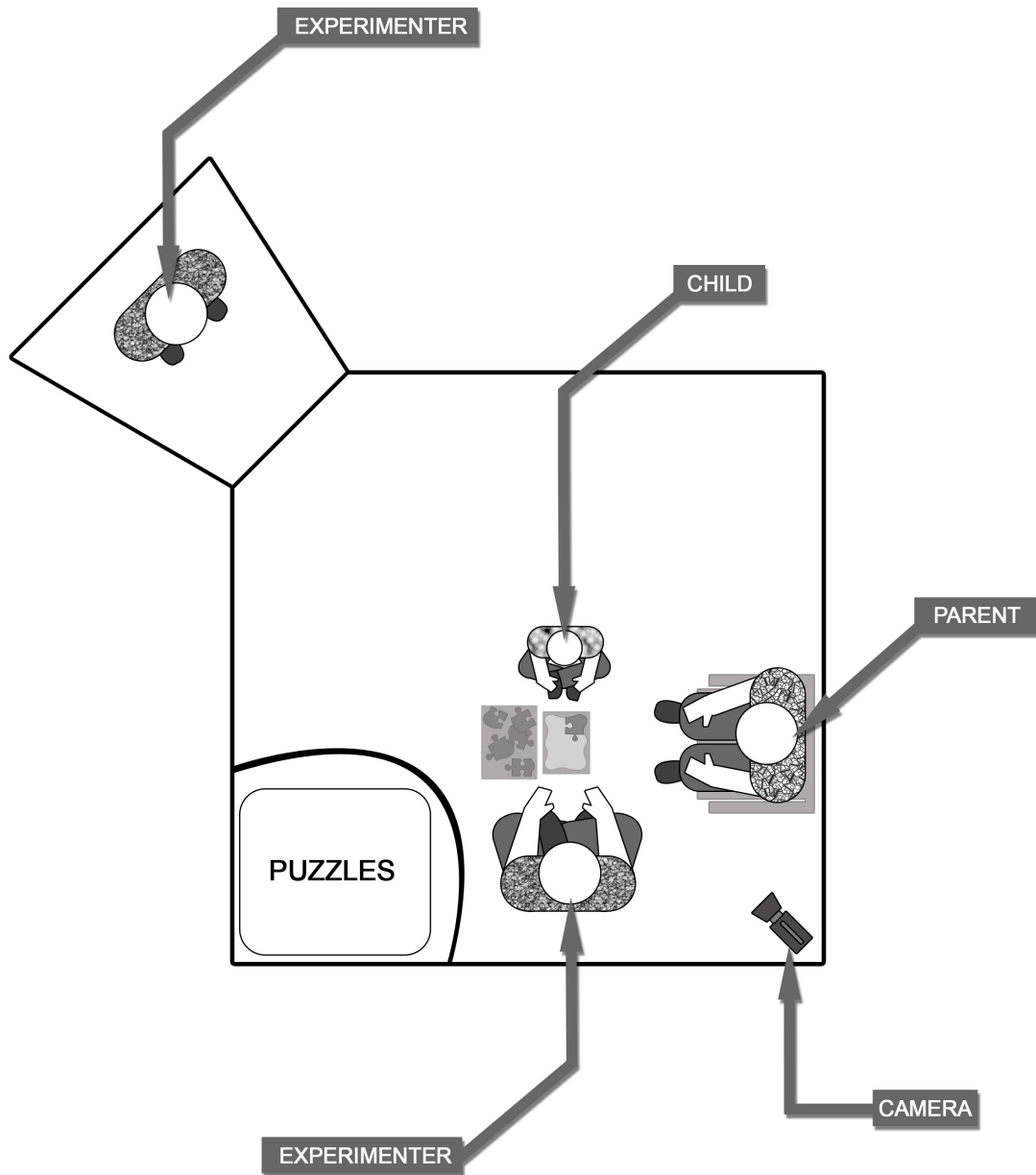


Figure A.5: Room set-up during experiment 1 and experiment 2.

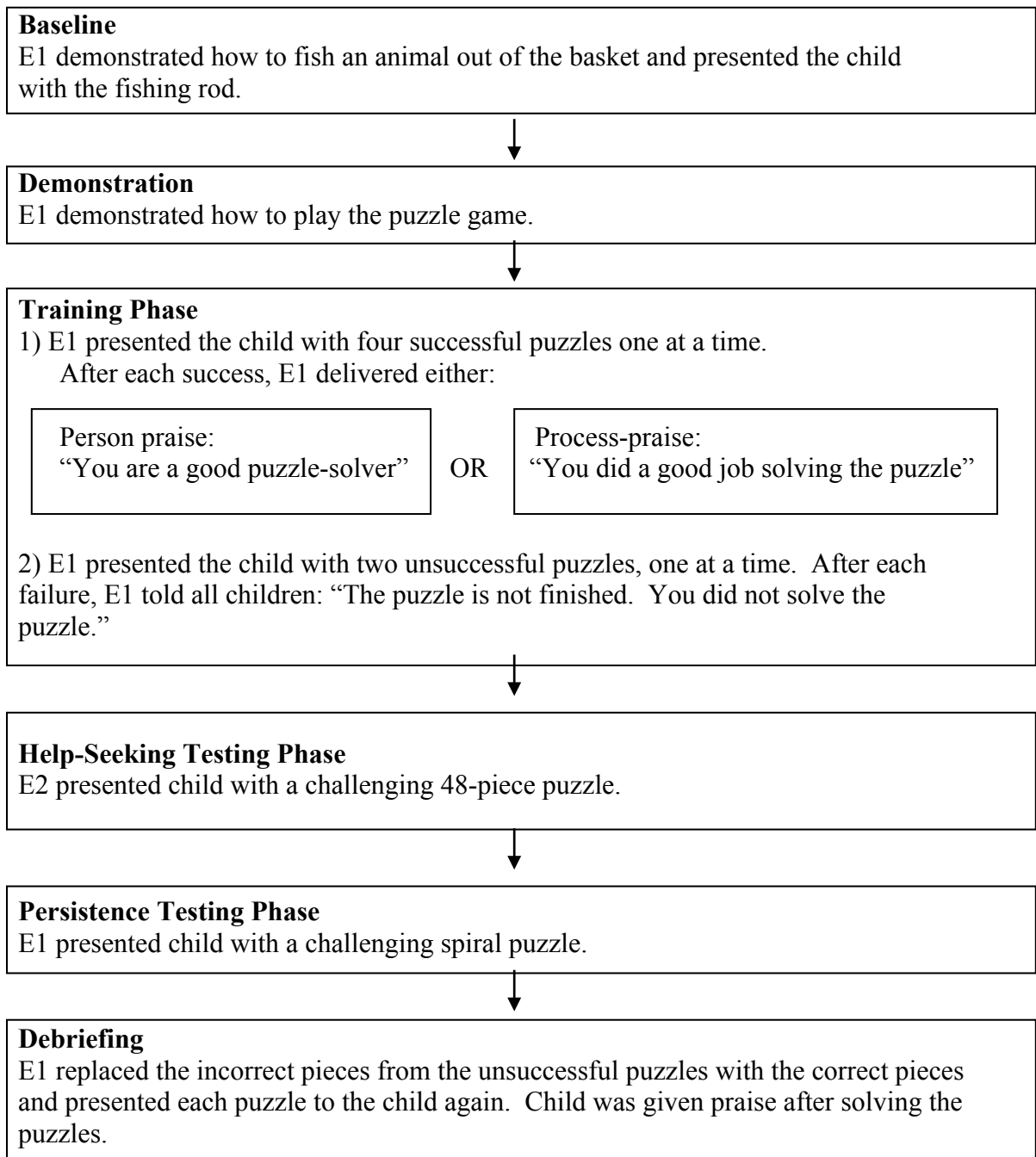


Figure A.6: Outline of procedures used in experiment 1.

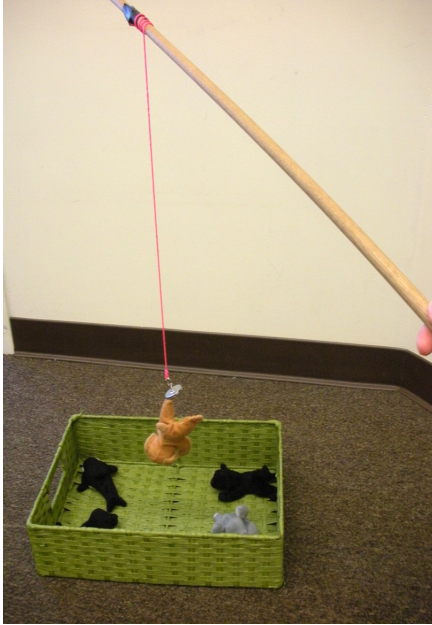
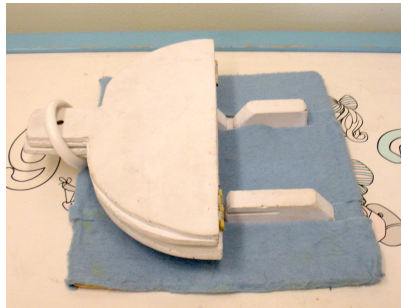
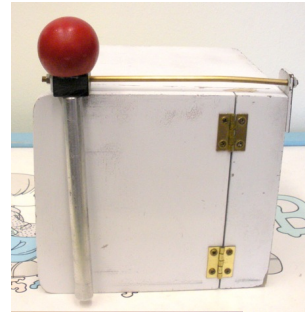


Figure A.7: Baseline prop used in experiment 1 and experiment 2.





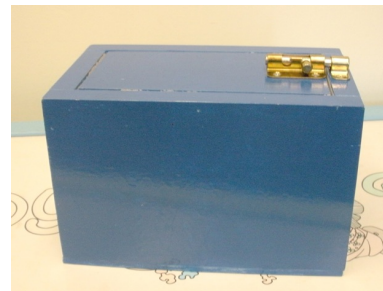
**“bear”**



**“dog”**

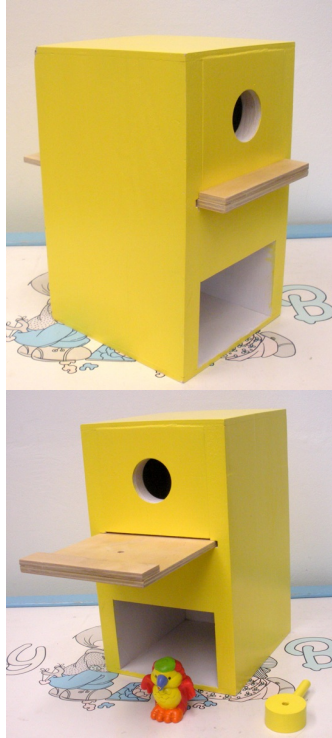


**“clown”**



**“frog”**

Figure A.8: Set of props used in experiment 2. For each prop, the top picture depicts how prop was presented to the child and the bottom picture depicts the solved prop.



**“bird”**



**“kangaroo”**

Figure A.8: Set of props used in experiment 2, Continued. For each prop, the top picture depicts how prop was presented to the child and the bottom picture depicts the solved prop.



Presentation



Step 1

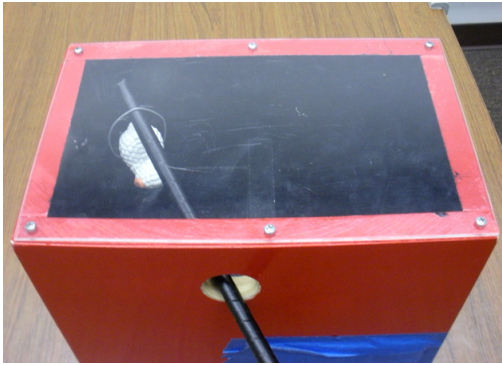


Step 2

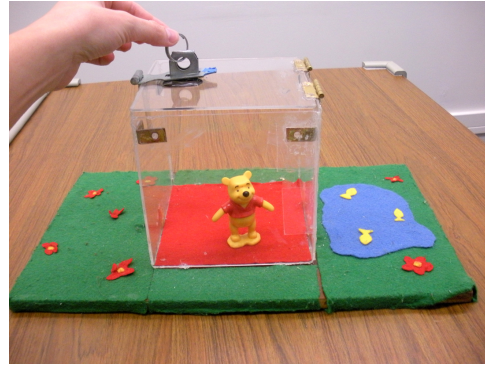
Figure A.9: Solving a successful prop in experiment 2.



Figure A.10: Modification of successful prop to make it an unsuccessful prop during Training Phase of experiment 2.

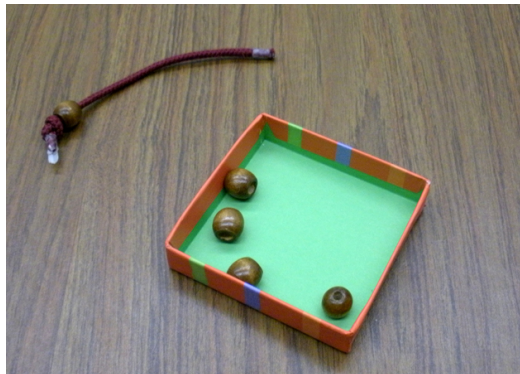


**“lamb”**



**“pooh”**

Figure A.11: Testing props used in the Help-Seeking Testing Phase of experiment 2.



**“string and beads”**

Figure A.12: Testing props used in the Persistence Testing Phase of experiment 2.

*Table A.1: List of scripts used when presenting puzzles to the children during the Training Phase of experiment 1.*

PuzzleScript	
Elmo	“This puzzle is a picture of Elmo. Look, he is laughing with his friend!”
Tiger	“This puzzle is a picture of a tiger. Look, he is kicking a soccer ball!”
Big Bird	“This puzzle is a picture of Big Bird. Look, he is running in the park!”
Boy	“This puzzle is a picture of a boy. Look, he is catching fish with his net!”
Submarine	“This puzzle is a picture of a submarine. Look, it is being chased by a shark!”
Simba	“This is a picture of Simba. Look, he is standing on top of a mountain!”

*Table A.2: List of stimuli during which frequency and latency of help-seeking were measured in experiment 1 and experiment 2.*

Phase:	Experiment 1:Puzzle	Experiment 2: Prop
Baseline:	Fishing game	Fishing game
Training Phase:	First and second unsuccessful puzzle	First and second unsuccessful prop
Help-Seeking Testing Phase:	First testing puzzle	First and second testing prop

*Table A.3: List of stimuli during which duration of task persistence was measured in experiment 1 and experiment 2.*

Phase:	Experiment 1:Puzzle	Experiment 2: Prop
Baseline:	Fishing game	Fishing game
Persistence Testing Phase:	Spiral Puzzle	String and Beads

## References

- Benenson, J. F., & Koulmazarian, M. (2008). Sex differences in help-seeking appear in early childhood. *British Journal of Developmental Psychology, 26*(2), 163-169.
- Bernhardt, A.J., & Forehand, R. (1975). The effects of labeled and unlabeled praise upon lower and middle class children. *Journal of Experimental Child Psychology, 19*, 536-543.
- Bowlby, J. (1969). *Attachment and loss, Vol. 1 Attachment*. New York: Basic Books.
- Bramlett, R. K., Scott, P., & Rowell, R. K. (2000). A comparison of temperament and social skills in predicting academic performance in first graders. *Special Services in the Schools, 16*(1-2), 147-158.
- Butler, R. (1998). Determinants of help seeking: Relations between perceived reasons for classroom help-avoidance and help-seeking behaviors in an experimental context. *Journal of Educational Psychology, 90*(4), 630-643.
- Carpenter, M., Nagell, K., & Tomasello, M. (1998). Social cognition, joint attention and communicative competence from 9-15 months of age. *Monographs of the Society for Research in Child Development, 63*(4), p i-176.
- Cimpian, A., Arce, H. C., Markman, E. M., & Dweck, C. S. (2007). Subtle linguistic cues affect children's motivation. *Psychological Science, 18*(4), 314-316.
- Colman, R. A., & Thompson, R. A. (2002). Attachment security and the problem-solving behaviors of mothers and children. *Merrill-Palmer Quarterly: Journal of Developmental Psychology, 48*(4), 337-359.
- Corpus, J.H., & Lepper, M.R. (2007). The effects of person versus performance praise on children's motivation: gender and age as moderating factors. *Educational Psychology, 27*(4), 487-508.
- De Cooke, P. A., & Brownell, C. A. (1995). Young children's help-seeking in mastery-oriented contexts. *Merrill-Palmer Quarterly: Journal of Developmental Psychology, 41*(2), 229-246.
- Dweck, C. S. (2002). Messages that motivate: How praise molds students' beliefs, motivation, and performance (in surprising ways). In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 37-60). San Diego: Academic Press.

- Dweck, C. S., & Reppucci, N. D. (1973). Learned helplessness and reinforcement responsibility in children. *Journal of Personality and Social Psychology*, 25(1), 109-116.
- Dweck, C.S., & Leggett, E.L. (1998). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Elliot, E.S., & Dweck, C.S. (1988). Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54(1), 5-12.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 70(3), 461-475.
- Elsner, B. (2009). Tools and goals: A social-cognition perspective on infant learning of object function. In T. Striano & V. Reid (Eds.), *Social Cognition: Development, neuroscience and autism* (144-156). Wiley-Blackwell.
- Geppert, U., & Küster, U. (1983). The emergence of 'wanting to do it oneself': A precursor of achievement motivation. *International Journal of Behavioral Development*, 6, 355-369.
- Goubet, N., Rochat, P., Maire-Leblond, C., & Poss, S. (2006). Learning from others in 9-18 month old infants. *Infant and Child Development*, 15, 161-177.
- Green, J. & Goldwyn, R. (2002). Annotation: Attachment disorganization and psychopathology: new findings in attachment research and their potential implications for developmental psychopathology in childhood. *Journal of Child Psychology and Psychiatry*, 43(7), 835-846.
- Gunnar, M. R., Brodersen, L., Nachmias, M., Buss, K., & Rigatuso, J. (1996). Stress reactivity and attachment security. *Developmental Psychobiology*, 29(3), 191-204.
- Harter, S. (1980). The development of competence motivation in the mastery of cognitive and physical skills: Is there still a place for joy? In G.C. Roberts & D. M. Landers (Eds.), *Psychology of motor behavior and sport* (pp. 3-20). Champaign, IL: Human Kinetics.
- Hastings, P.D., Sullivan, C., McShane, K.E., Coplan, R.J., Utendale, W.T., & Vyncke, J.D. (2008). Parental socialization, vagal regulation, and preschoolers' anxious difficulties: Direct mothers and moderated fathers. *Child Development*, 79(1), 45-64.



- Hertsgaard, L., Gunnar, M., Erickson, M. F., & Nachmias, M. (1995). Adrenocortical responses to the strange situation in infants with disorganized/disoriented attachment relationships. *Child Development, 66*(4), 1100-1106.
- Heyman, G.D. (2008). Talking about success: implications for achievement motivation. *Journal of Applied Developmental Psychology, 29*, 361-370.
- Honig, A.S., & Wittmer, D.S. (1985). Toddler bids and teacher responses. *Child Care Quarterly, 14*(1), 14-29.
- Kagan, J. (1981). *The second year: The emergence of self-awareness*. Cambridge, MA: Harvard University Press.
- Kamins, M. L., & Dweck, C. S. (1999). Person versus process praise and criticism: Implications for contingent self-worth and coping. *Developmental Psychology, 35*(3), 835-847.
- Karabenick, S A. (1998). *Strategic Help Seeking*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Kiff, C.J., Lengua, L.J., & Zalewski, M. (2011). Nature and nurturing: parenting in the context of child temperament. *Clinical Child and Family Psychology Review, 14*, 251-301.
- Kochanska, G., Philibert, R. A., & Barry, R. A. (2009). Interplay of genes and early mother-child relationship in the development of self-regulation from toddler to preschool age. *Journal of Child Psychology and Psychiatry, 50*(11), 1331-1338.
- Leondari, A., Syngollitou, E., & Klossenoglou, G. (1998). Academic achievement, motivation and future selves. *Educational Studies, 24*(2), 153-163.
- Lyons-Ruth, K. (2008). Contributions of the mother-infant relationship to dissociative, borderline, and conduct symptoms in young adulthood. *Infant Mental Health Journal. Special Issue: The Infant's Relational Worlds: Family, Community & Culture, 29*(3), 203-218. Matas, Arend, & Sroufe (1978).
- Middleton, M. J., & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology, 89*(4), 710-718.
- Morelius, E., Nelson, N., & Gustafsson, P.A. (2006). Salivary cortisol response in mother-infant dyads at high psychosocial risk. *Child: care, health and development, 33*(2), 128-136.

- Mosier, C.E., & Rogoff, B. (1994). Infants' instrumental use of their mothers to achieve their goals. *Child Development, 65*, 70-79.
- Mueller, C.M., & Dweck, C.S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75*(1), 33-52.
- Neitzel, C. & Stright, A.D. (2003). Mothers' scaffolding of children's problem solving: establishing a foundation of academic self-regulatory competence. *Journal of Family Psychology, 17*(1), 147-159.
- Nelson-Le Gall, S.A. (1981). Help-seeking: an understudied problem-solving skill in children. *Development Review, 1*(13), 224-246.
- Nelson-Le Gall, S.A. (1987). Necessary and unnecessary help-seeking in children. *Journal of Genetic Psychology, 148*(1), 53-62.
- Nelson-Le Gall, S.A. (1990). Academic achievement orientation and help-seeking behavior in early adolescent girls. *Journal of Early Adolescence, 10*(2), 176-190.
- Newman, R. S. (1990). Children's help-seeking in the classroom: The role of motivational factors and attitudes. *Journal of Educational Psychology, 82*(1), 71-80.
- Newman, R. S. (1994). Adaptive help seeking: A strategy of self-regulated learning. In D.H. Schunk & B.J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications*. (pp. 283-301). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Newman, R. S. (1998). Students' help seeking during problem solving: Influences of personal and contextual achievement goals. *Journal of Educational Psychology, 90*(4), 644-658.
- Posner, M.I., & Rothbart, M.K. (2000). Developing mechanisms of self-regulation. *Development and Psychopathology, 12*, 427-441.
- Putnam, S.P., & Rothbart, M.K. (2006). Development of short and very short forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment, 87*(1), 103-113.
- Puustinen, M. (1998). Help-seeking behavior in a problem-solving situation: Development of self-regulation. *European Journal of Psychology of Education, 13*(2), 271-282.

- Puustinen, M., Kokkonen, M., Tolvanen, A., & Pulkkinen, L. (2004). Children's help seeking and impulsivity. *Learning and Individual Differences, 14*(4), 231-246.
- Puustinen, M., Lyyra, A., Metsäpelto, R., & Pulkkinen, L. (2008). Children's help seeking: the role of parenting. *Learning and Instructions, 18*(2), 160-171.
- Ready, D.D., LoGerfo, L.F., Burkam, D.T., & Lee, V.E. (2005). Kindergarten literacy learning: Do classroom behaviors make a difference? *The Elementary School Journal, 106*(1), 21-38.
- Rice, M.L. (1989). Children's language acquisition. *American Psychologist, 44*(2), 149-156.
- Rothbart, M.K. (2007). Temperament, development, and personality. *Current Directions in Psychological Science, 16*(4), 207-212.
- Rothbart, M.K., & Hershey (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly: Journal of Developmental Psychology, 40*(1), 21-39.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In N. Eisenberg, W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, social, emotional, and personality development (6th ed.)*. (pp. 99-166). Hoboken, NJ, US: John Wiley & Sons Inc.
- Rothbart, M.K., & Derryberry, D. (1981). Development of individual differences in temperament. In M.E. Lamb & A.L. Brown (Eds.), *Advances in developmental psychology* (Vol. 1, pp. 37-86). Hillsdale, NJ: Erlbaum.
- Rothbart, M. K., & Hwang, J. (2005). *Temperament and the development of competence and motivation*. New York, NY, US: Guilford Publications.
- Ryan, A. M., & Pintrich, P. R. (1997). "Should I ask for help?" the role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology, 89*(2), 329-341.
- Schunk, D. H. (2005). Self-regulated learning: The educational legacy of Paul R. Pintrich. *Educational Psychologist, 40*(2), 85-94.
- Scofield, J., & Behrend, D.A. (2008). Learning words from reliable and unreliable speakers. *Cognitive Development, 23*, 278-290.
- Shell, R.M., & Eisenberg, N. (1992). A developmental model of recipients' reactions to aid. *Psychological Bulletin, 111*(3), 413-433.

- Shiner, R. & Caspi, A. (2003). Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*, 44(1), 2-32.
- Smeekens, S., Riksen-Walraven, J. M., & van Bakel, H. J. A. (2007). Multiple determinants of externalizing behavior in 5-year-olds: A longitudinal model. *Journal of Abnormal Child Psychology*, 35(3), 347-361.
- Spangler, G., & Grossmann, K. E. (1993). Biobehavioral organization in securely and insecurely attached infants. *Child Development*, 64(5), 1439-1450.
- Sroufe, L.A. (1988). The role of infant-caregiver attachment in development. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp.18-38). Hillsdale, NJ: Erlbaum.
- Stipek, D., Recchia, S., McCintic, S., & Lewis, M. (1992). Self-Evaluation in young children. *Monographs of the Society for Research in Child Development*, 57, i-95.
- Stright, A.D., Neitzel, C., Sears, K.G., & Hoke-Sinex, L. (2001). Instruction beings in the home: relations between parental instruction and children's self-regulation in the classroom. *Journal of Educational Psychology*, 93(3), 456-466.
- Tanaka, A., Murakami, Y., Okuno, T., & Yamauchi, H. (2001). Achievement goals, attitudes toward help seeking and help-seeking behavior in the classroom. *Learning and Individual Differences*, 13(1), 23-36.
- Thompson, R. B. (1999). Gender differences in preschoolers' help-eliciting communication. *Journal of Genetic Psychology*, 160(3), 357-368.
- van Ijzendoorn, M. H., Schuengel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*, 11(2), 225-249.
- van Leeuwen, K.G., Mervielde, I., Braet, C., & Bosmans, G. (2004). Child personality and parental behavior as moderators of problem behavior: variable- and person-centered approaches. *Developmental Psychology*, 40(6), 1028-1046.
- Wachs, T.D. (1991). Synthesis: Promising research designs, measures, and strategies. In T.D. Wachs & R. Plomin (Eds.), *Conceptualization and measurement of organism-environment interaction*. (pp. 162-182). Washington: American Psychological Association.
- Wood, D. (1989). Social interaction as tutoring. In M.H. Bornstein & J.S. Bruner (Eds.), *Interaction in human development* (pp. 59-80). Hillsdale, NJ: Erlbaum.

Zentall, S.R., & Morris, B.J. (2010). "Good job, you're so smart: the effects of inconsistency of praise type on young children's motivation. *Journal of Experimental Child Psychology*, *107*, 155-163.