



## Procrastination in early childhood: Associations with self-regulation, negative affectivity, and the home environment

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### ABSTRACT

To examine the roles of self-regulation, negative affectivity, and the home environment in the development of procrastination, the current study investigated children's procrastination in relation to conscientiousness, effortful control, negative affectivity, parenting, and socioeconomic status. Parents of 3- to 6-year-olds ( $N = 396$ ; 81.8% White) completed questionnaires assessing the above-mentioned variables. Children's age ( $\beta = .072$ ), conscientiousness ( $\beta = -.512$ ), effortful control ( $\beta = -.134$ ), and negative affectivity ( $\beta = .269$ ) were significantly related to children's procrastination after controlling for parenting, and socioeconomic status. Although parental democratic participation, parental education, and family income were negatively related to children's procrastination, they were not associated with procrastination after considering children's personality and temperamental variables. When children were divided into younger (3- and 4-year-olds) and older (5- and 6-year-olds) age groups, the results did not change except for parental education. Parental education was not associated with younger children's procrastination, but it was negatively associated with older children's procrastination. Self-regulation and negative affectivity were most strongly associated with early childhood procrastination compared to aspects of the home environment. Thus, procrastination might be an early emerging tendency that is closely related to personality and temperament. Future studies should continue to investigate the developmental trajectory of procrastination and explore how contextual factors influence its early and ongoing development.

Children often postpone undesirable but necessary activities in their day-to-day lives. For example, they put off doing homework until the deadline or cleaning up their toys after play time. The tendency to voluntarily delay tasks is defined as *procrastination* (Lay, 1986). Procrastination is particularly concerning as it predicts several adverse adult outcomes, including poorer academic performance (e.g., Rosário et al., 2009), mental and physical health (e.g., Beutel et al., 2016; Sirois et al., 2003), and financial well-being (e.g., Akerlof, 1991). Given the negative long-term impacts of procrastination, it is important to investigate its early development to understand how this behavioral tendency develops and to inform prevention and intervention efforts. However, to date, very little is known about young children's procrastination (but see Fuke et al., 2023; Sutter et al., 2018). Thus, the current study will explore early childhood procrastination and investigate its relation to aspects of personality and temperament and the home environment using parent questionnaires.

### 1. What procrastination is and is not

Procrastination, strategic delay, task avoidance, and non-compliance are all behaviors that result in a task not being carried out in a timely fashion (or at all) and, thus, are often confused with one another (e.g., Kalb & Loeber, 2003; Klingsieck, 2013). The commonly agreed-upon definition of *procrastination* is the voluntary delay of an intended task even if one expects negative consequences of delay on the future self (Klingsieck, 2013). Based on this definition, procrastination is conceptually distinct from strategic delay, task avoidance, and non-compliance because strategic delay does not include any anticipated adverse outcome of delaying (Klingsieck, 2013), and neither task avoidance nor non-compliance involves an intention to complete the task (e.g., Anderson, 2003; Kuczynski & Kochanska, 1990). Further, the most commonly used procrastination measure, the General Procrastination Scale (Lay, 1986), captures irrational delay and not task avoidance (see Steel, 2010). Thus, the current study adopts Klingsieck (2013)'s definition of procrastination and measures children's procrastination with a previously modified preschool version of the General Procrastination

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Scale (Lay, 1986) called the Preschool Procrastination Scale (Fuke et al., 2023).

## 2. The development of procrastination in early childhood

So far, literature on procrastination has mostly focused on later childhood (e.g., Pychyl et al., 2002) and adulthood (e.g., Ferrari et al., 2009). Only two studies have examined the early emergence and development of procrastination in young children. In the first study, Sutter et al. (2018) assigned 3- to 6-year-olds a boring bead sorting task in which they needed to collect yellow beads from a bowl of multicolored beads. Children were asked whether they preferred to complete it right now or the next day. One-third of the sample chose to delay the task until tomorrow, indicating that young children do procrastinate. Moreover, children's procrastination decreased with age: 44% of 3- and 4-year-old children chose to put off the boring task tomorrow, whereas only 27% of 5- and 6-year-olds chose to put it off. The second study investigated children's procrastination using a parent report questionnaire (Fuke et al., 2023). Parents of 3- to 6-year-old children were asked to complete a procrastination questionnaire (i.e., the Preschool Procrastination Scale, adapted from Lay, 1986) and to provide examples of their child's procrastination in everyday life. Parents reported that their child procrastinated on everyday tasks and their procrastination tendency increased with age. Moreover, 3- and 4-year-old children were more likely to procrastinate cleaning up messes and completing routines, whereas 5- and 6-year-old children were more likely to procrastinate doing chores and schoolwork. Overall, this emerging literature suggests that children may begin to procrastinate during the preschool years but reveals conflicting findings regarding the developmental trajectory of procrastination in early childhood.

## 3. Theoretical accounts of procrastination

Several theoretical accounts have attempted to explain individuals' tendency to procrastinate: Some posit that failures in self-regulatory mechanisms cause procrastination (e.g., Lay, 1986; Steel, 2007), while others highlight negative emotions elicited by the task as driving procrastination (i.e., The Appraisal-Anxiety-Avoidance model, Milgram et al., 1988). Although a handful of studies have examined these approaches in school-aged children and adults (e.g., Scher & Osterman, 2002), little is known about these relations in early childhood. So far, Fuke et al. (2023) showed that poor executive function and future-thinking predicted greater procrastination tendencies in preschool children, in line with the adult findings suggesting that procrastination results from self-regulation failures (Steel, 2007) and is associated with poorer episodic future thinking and consideration of future consequences (Rebetz et al., 2016). Nevertheless, the Appraisal-Anxiety-Avoidance model has not yet been tested in early childhood.

Recent studies with adults also suggest an important influence of the environment on procrastination. For instance, lower incomes (e.g., Chow, 2011), less education (Ferrari et al., 2009), lower environmental predictability (due to lower socioeconomic conditions, e.g., Chen & Qu, 2017), and strict parenting (Woo & Yeo, 2019) increase adults' tendency to procrastinate. To date, little is known about the influence of the environment on childhood procrastination. The bioecological theory of human development (Bronfenbrenner & Ceci, 1993; Bronfenbrenner & Morris, 2006) asserts that children's personal characteristics and their reciprocal interactions with the environment play a pivotal role in child development. This theory views a child's environment as nested ecological systems: (a) the microsystem, (b) the mesosystem, (c) the exosystem, (d) the macrosystem, and (e) the chronosystem. These systems are embedded within one another and ordered based on the impact that they have on the child. For example, the microsystem is the innermost system and involves the most immediate environment in which the child has direct interaction with agents such as parents or

peers (Bronfenbrenner & Morris, 2006). In contrast, the exosystem is one of the middle systems involving the external elements which indirectly affect the child such as parent-school relations (Bronfenbrenner & Morris, 2006). The current study uses the bioecological model of development as a framework to examine different personal and contextual influences on the early development of procrastination. We investigated self-regulation and negative affectivity as personal characteristics to test theoretical accounts of procrastination (i.e., the self-regulation model and the Appraisal-Anxiety-Avoidance model). Because so little is known about the relation between the home environment and procrastination in early childhood, we investigated parenting style as an element of the microsystem, and family socioeconomic status as an element of the exosystem and examined their relations with procrastination.

### 3.1. Procrastination and self-regulation

Procrastination has been conceptualized as a failure in self-regulation (Steel, 2007). Indeed, adult procrastinators show a decreased ability to delay gratification (Dewitte & Schouwenburg, 2002) and a lack of goal-orientation (Howell & Watson, 2007). Two main personal characteristics, conscientiousness and effortful control, are closely related to self-regulation. Conscientiousness is a personality trait referring to individuals' tendency to control their behavior in the service of a goal (McCrae & Löckenhoff, 2010). Effortful control is defined as a temperamental predisposition to exercise self-regulation (Rothbart & Putnam, 2006) and it is often found to play a role in developing conscientiousness (Eisenberg et al., 2014). There is a strong inverse relation between adults' and 7- to 12-year-old children's procrastination and conscientiousness, indicating that individuals with higher conscientiousness tend to have fewer procrastination tendencies (Lay et al., 1998; Schouwenburg & Lay, 1995).

In early childhood, poor delay of gratification and planning/organization predicted a greater tendency to procrastinate even after controlling for future thinking (Fuke et al., 2023), which suggests that child procrastinators also demonstrate poor self-regulation. The current study examines the link between self-regulation and procrastination by measuring children's conscientiousness and effortful control. Low levels of conscientiousness or effortful control may lead children to prefer short-term gains over long-term benefits and increase their likelihood of delaying the intended task for the time being even if it has undesirable consequences.

### 3.2. Procrastination and negative affectivity

Perceiving a task as unpleasant (e.g., Afzal & Jami, 2018) or experiencing negative emotions in response to a task (e.g., stress; Blunt & Pychyl, 2000) are related to higher levels of procrastination in adults. Milgram et al. (1988, 1998) explained the relation between adults' emotional responses and procrastination using the Appraisal-Anxiety-Avoidance model. According to the model, individuals first appraise whether the task is aversive or not. If the task is aversive, this appraisal creates *anxiety*. Increasing anxiety levels lead to *avoidance*, and individuals procrastinate on the task for temporary relief from the anxiety (Milgram et al., 1998). Indeed, procrastination behavior is more common in anxiety-eliciting academic tasks such as preparing for exams compared to less anxiety-provoking, routine academic tasks such as completing homework (Milgram & Toubiana, 1999). Procrastination only provides temporary relief because the negative long-term consequences of delaying outweigh the immediate benefits. Thus, procrastination might be a powerful negative reinforcement as individuals avoid negative emotions, however, this only lasts for a short period as the negative emotions re-emerge later when they are inevitably faced with the uncompleted task.

The current study attempts to test the Appraisal-Anxiety-Avoidance model with young children. Young children's negative affectivity,

referred to as the expression and control of negative emotions such as frustration, fear, and discomfort (Putnam & Rothbart, 2006), might modulate their responses to anxiety-inducing tasks, and be associated with an increase or a decrease in children's inclination to procrastinate. For example, children with higher negative affectivity might become easily anxious about a stressful task and they might procrastinate more to reduce or avoid their anxiety.

### 3.3. Procrastination and the home environment

In addition to personal characteristics, children's home environments may also influence their tendency to procrastinate. Two important aspects of the home environment are parenting styles and socioeconomic status.

**Parenting Styles.** Authoritative parents often practice behavioral control in a rational manner but also show support for their child's agency, but authoritarian parents maintain an emotional distance from their child and enforce strict rules to shape their child's behaviors (Baumrind, 1971, 2013). Adults with authoritarian parents tend to procrastinate more and adults with authoritative parents tend to procrastinate less (e.g., Woo & Yeo, 2019). As such, parenting styles might also be associated with children's tendency to procrastinate. The present study focused on key aspects of authoritative and authoritarian parenting styles: democratic participation and directiveness. Parents who are high in democratic participation grant more autonomy to their children to encourage their participation in the family decision-making process (Robinson et al., 1995). In contrast, parents with high directiveness assume responsibility for regulating their child's behaviors and have children who are less autonomous (Wu et al., 2002). College students whose parents used more democratic discipline were found to procrastinate less (Zakeri et al., 2013). Along similar lines, children of parents high in democratic participation might also procrastinate less because they have more input into their responsibilities and daily activities, whereas children of directive parents might procrastinate more as they might not have enough opportunity to practice self-regulation or have a schedule filled with activities that they do not enjoy so are more likely to procrastinate completing these tasks (e.g., Karreman et al., 2006).

In addition to the direct relation, parenting style might also moderate the relation between negative affectivity and procrastination. As previously mentioned, the Appraisal-Anxiety-Avoidance model suggests that when individuals cannot control their negative affect, they are more likely to procrastinate the task (Milgram et al., 1998). Support from parents may weaken or strengthen this relation. Past research with college students has shown that perceived social support contributed to lower levels of negative emotional experiences and procrastination (e.g., Yang et al., 2021). As such, parents' encouraging democratic participation might provide a buffer for children who suffer from negative emotions toward their responsibilities (e.g., Morris et al., 2013). These children might be more likely to consult their parents about managing their responsibilities than others whose parents encourage less democratic participation. Also, children of directive parents might procrastinate more when they have negative emotions about the task as they might not receive as much emotional support from parents compared to children with less directive parents (e.g., Mathis & Bierman, 2015; Rubin et al., 2001).

**Family Socioeconomic Status.** Family socioeconomic status is another aspect of the home environment associated with children's tendency to procrastinate. Family income and parental education (two ways in which socioeconomic status is often measured) are related to varying levels of environmental predictability. For example, low economic conditions are associated with greater levels of chaos (e.g., less structure, fewer routines, high levels of noise) compared to high economic conditions, which make the home environment of low-income families less predictable (e.g., Matheny et al., 1995). Further, unpredictable conditions in the home environment are associated with

adverse longitudinal effects on children's social, emotional, and cognitive development (e.g., Bradley & Corwyn, 2002; Evans et al., 2005). For example, children from low-income families showed higher levels of psychological distress, helplessness, and lower levels of self-regulation than children from middle-income families later in development (Evans et al., 2005).

Family socioeconomic status might also influence future-oriented decision-making processes. Life-History theory argues that physiological and psychological systems constantly assess environmental predictability and adopt either 'fast' or 'slow' strategies to maintain current and future well-being (Del Giudice et al., 2015). Fast strategies focus on immediate outcomes and ignore future consequences. In contrast, slow strategies include postponing immediate gratification and prioritize longer-term goals (Griskevicius et al., 2011). For example, individuals who have experienced job insecurity are more likely to perceive environmental unpredictability and tend to adopt fast strategies to receive benefits immediately, whereas individuals who have lived in resource-rich environments tend to adopt slow strategies and prefer long-term investments as the environment is reliable and appropriate for investment. Indeed, adults who adopted fast strategies due to environmental unpredictability were found to gamble more and value immediate gratification, whereas those who adopted slow strategies tended to avoid risky gambling and valued future gratification (Griskevicius et al., 2011).

Procrastination has been classified as a fast strategy: individuals focus on immediate payoffs and postpone their responsibilities that have long-term benefits when procrastinating (Chen & Qu, 2017). Environmental predictability (measured by socioeconomic status) explained individual differences in procrastination: Adults who were unemployed or who had lower levels of education reported higher levels of procrastination than those who were employed or had a higher level of education (Beutal et al., 2016; Ferrari et al., 2009).

In early childhood, a few studies have shown that children change their delaying decisions according to environmental predictability. In an experimental study, 3- to 5-year-old children waited for future rewards longer if the experimenter had shown they were reliable versus unreliable (Kidd et al., 2013). Also, experiencing family financial instability, such as parental job loss, at the age of 4 predicted an increase in the preference for immediate gratification at the age of 6 (Sturge-Apple et al., 2017). Procrastination, similar to delay of gratification, is a future-oriented decision-making process, and studies often reveal a strong positive relation between these two constructs (Fuke et al., 2023). Thus, children from lower socioeconomic backgrounds might have a greater tendency to procrastinate than their peers from higher socioeconomic backgrounds, which might foster the tendency to prioritize immediate gratification and delay undesirable activities.

In addition to influencing environmental predictability, parental education might also impact children's procrastination via parental support and supervision. More educated parents might place a priority on children's learning and education and thus provide better-quality support and supervision of their child's daily activities and responsibilities (Rosário et al., 2009). Also, parents who are more educated might model less procrastination behavior or provide strategies to help their child overcome procrastination. Thus, children might internalize their parents' values and behavior and procrastinate less (e.g., Scher & Ferrari, 2000). Indeed, 11- to 17-year-old children's academic procrastination was higher when their parents had lower levels of education (Rosário et al., 2009). Overall, family socioeconomic status (i.e., parental education and income) might be an important home environment factor that influences procrastination in early childhood.

### 3.4. The current study

The present study examined the relations between procrastination, personal characteristics and the home environment in preschool-aged children. We predicted that: (1) conscientiousness and effortful control

would be negatively related to procrastination, (2) negative affectivity would be positively related to procrastination in line with the Appraisal-Anxiety-Avoidance model (Milgram et al., 1998), (3) directiveness parenting style (positively) and democratic participation parenting style (negatively) would be related to procrastination, (4) the relation between negative affectivity and procrastination would be moderated by parenting: the relation will be stronger for children of parents high in directiveness and weaker for children of parents high in democratic participation, and (5) parental education and family income would be negatively related to procrastination.

#### 4. Method

##### 4.1. Participants

An a priori power analysis suggested that a sample size of 150 participants would be sufficient to detect a small-medium effect size ( $p = .20$ , power = .80,  $\alpha = .05$ ). We collected data from 501 participants to ensure substantial power and to compensate for expected data loss from online participation. Participants were recruited via Prolific (<http://www.prolific.co>). Prolific is a reliable subject pool website that advertises studies to potential participants (Palan & Schitter, 2018). The study was advertised on Prolific for the participants who are native English-speaking residents of the United States with a Prolific rating of at least 98% and whose children were typically developing. Five hundred and one parents participated in the study. Participants were further excluded from the final sample for the following reasons: they did not pass at least 4 out of 5 attention checks ( $n = 1$ ), their data seemed to be duplicated ( $n = 3$ ), they completed the study exceptionally quickly or slowly (+ / - 2 SD above/below the mean completion time [ $M = 36.17$  minutes];  $n = 21$ ), they provided inconsistent dates of birth for their child in two places in the questionnaire ( $n = 34$ ), their child was outside the 3- to 6-year-old age range ( $n = 18$ ), they reported that the child was not typically developing ( $n = 19$ ) or they failed to estimate their child's age in years and months within one year ( $n = 9$ ).

The final sample consisted of 396 participants (213 mothers, 177 fathers, 1 guardian, 5 chose not to disclose). Of these participants, there were 117 parents of a 3-year-old child (54 girls and 63 boys;  $M = 41.00$  months,  $SD = 3.27$ ), 126 parents of a 4-year-old child (56 girls and 70 boys;  $M = 53.98$  months,  $SD = 3.44$ ), 94 parents of a 5-year-old child (40 girls and 54 boys;  $M = 64.57$  months,  $SD = 3.42$ ), and 59 parents of a 6-year-old child (25 girls and 34 boys;  $M = 78.08$  months,  $SD = 3.80$ ). Younger children (3- and 4-year-olds) were mostly attending daycare or preschool ( $n = 171$ , 71%), whereas older children (5- and 6-year-olds) were mostly attending school (i.e., kindergarten or first grade;  $n = 112$ , 73%) at the time of testing. The majority of parents were White (81.8%; 12.1% Black or African American, 7.3% Hispanic, Latino, or Spanish, 2.8% Asian, 2% Alaskan Native or American Indian, 0.5% Asian Indian, 0.3% Middle Eastern, and 0.8% Other) and from middle-class backgrounds (27.6% were earning more than \$100,000 annually, 22.4% between \$75,000-\$100,000, 32.9% between \$40,000-\$75,000, 11.5% between \$25,000-\$40,000, 5.6% less than \$25,000, and 1% did not disclose their annual income). Parents also mostly had a bachelor's degree (34.3%) or graduate degree (33.6%), followed by some college education or 2-year degree (24%), high school education (5.3%), no formal education (0.3%), other (e.g., general education diploma; 2%), and undisclosed (0.5%). Our sample was the same as the sample reported in Fuke et al. (2023) as it was part of a large project on children's procrastination.

##### 4.2. Measures

*The Preschool Procrastination Scale* (Fuke et al., 2023, adapted from Lay, 1986)

The Preschool Procrastination Scale (PPS) was adapted from Lay's (1986) 20-item adult General Procrastination Scale to capture young

children's procrastination tendencies (Fuke et al., 2023). The items of the original scale were modified to be appropriate for young children and their daily tasks. For example, "returning a toy borrowed from a friend" was used instead of "returning a library book." Five questions were dropped from the preschool form and the PPS included 15 items (e.g., "My child generally delays before starting on tasks that they has to do"; Appendix). Parents rated statements on how characteristic these behaviors were of their child on a 5-point scale ranging from "Extremely Uncharacteristic" to "Extremely Characteristic." Children's mean procrastination scores are ranged from 1 to 5, with higher scores representing greater procrastination. The questionnaire revealed high internal consistency,  $\alpha = .83$ .

*The Hierarchical Personality Inventory for Children-Conscientiousness Scale* (Mervielde & De Fruyt, 1999)

The inventory is a 30-item scale that measures children's personality traits. For this study, only the conscientiousness subscale was used (e.g., "My child carries out work to the last detail"). Parents were asked to rate each of six items on a 5-point scale ranging from "Very Untypical" to "Very Typical" based on how typical it was of their child. Higher scores indicated greater levels of conscientiousness. The subscale revealed high internal consistency,  $\alpha = .81$ .

*Child Behavior Questionnaire- Very Short Form* (Putnam & Rothbart, 2006)

The Child Behavior Questionnaire-Very Short Form (CBQ) measures three core aspects of children's temperament in 36 items: surgency (12 items), negative affectivity (12 items), and effortful control (12 items). The negative affectivity and effortful control subscales were used in the study. Parents were asked to rate how true items were for their child on a 7-point scale ranging from "Extremely Untrue" to "Extremely True" with an additional "Not Applicable" option. Example items include: "My child seems always in a big hurry to get from one place to another" and "My child is quite upset by a little cut or bruise." Higher mean scores indicated that children showed higher levels of negative affectivity and effortful control. The negative affectivity ( $\alpha = .76$ ) and effortful control ( $\alpha = .72$ ) subscales revealed good internal consistency.

*The Parenting Styles and Dimensions Questionnaire* (Robinson et al., 1995)

The democratic participation subscale (5 items) and the directiveness subscale (4 items) of the questionnaire were administered. The democratic participation subscale was used to measure authoritative parenting, and the directiveness subscale measured authoritarian parenting. Parents were asked to rate how often they and their spouse exhibit certain behaviors with their child on a 5-point scale ranging from "Never" to "Always." Example democratic participation items included: "They allow our child to give input into family rules" and "They take into account our child's preferences in making plans for the family." Example directiveness items included: "They tell our child what to do" and "They demand that our child do things." Higher scores indicated that parents allowed their children more democratic participation in the household or showed more directiveness. For both subscales, participants' ratings on themselves were positively correlated with their ratings on their spouses ( $r[394] = .512$ ,  $p < .001$  for democratic participation and  $r[394] = .613$ ,  $p < .001$  for directiveness). Therefore, a composite parent score (self and spouse) was created by aggregating their ratings for each subscale. The composite subscales revealed high internal consistency ( $\alpha = .82$  for democratic participation, and  $\alpha = .89$  for directiveness).

##### 4.3. Demographics questionnaire

Parents completed a demographics questionnaire about their family and child, including questions about the family's ethnicity, the age and sex of the parent and child, education of the parent, and annual family income. Of particular interest, the education level of the parent and annual family income were measured as indicators of socioeconomic status. Parents were asked to indicate the highest education level they attained (six options ranging from "no formal education" to "graduate

degree”). As for family income, parents were asked to indicate the income category that best described their annual income (five options ranging from “less than \$25,000 USD” to “more than \$100,000 USD”).

#### 4.4. Procedure

This study was part of a larger project on the cognitive and social correlates of children’s procrastination behavior (see also Fuke et al., 2023). Participants completed the study online via Qualtrics (<https://www.qualtrics.com>) in February 2021. Participants provided informed consent before starting the study. The questionnaires were presented to participants in a randomized order except for the demographics questionnaire, which was always presented at the end of the study. The items in each questionnaire were administered in a standard, fixed order. There were five attention checks randomly placed in the questionnaires to ensure participants were paying attention. The attention check questions used the same response scale as the questionnaire and instructed the participants to select a particular response (e.g., “Please select ‘often’ for this question”). Participants who correctly answered four out of the five attention check questions were included in the study. The study took approximately 36 minutes to complete. All procedures for this study were approved by the Research Ethics Board at Brock University.

## 5. Results

### 5.1. Analytic approach

The study concurrently measured children’s procrastination and different aspects of personality, temperament, and home environment via parent-report questionnaires. In our preliminary analysis, independent samples t-tests were performed to examine the effect of the parent’s relationship to the child and the child’s sex on procrastination. Pearson Correlations were performed to examine relations between age and PPS score. Then, Pearson correlations and linear regressions were performed to examine the relation between children’s procrastination and their personal characteristics and home environment. The PROCESS Macro (Hayes, 2021) was also used to examine if parenting styles moderated the relation between negative affectivity and procrastination. Data were analyzed using SPSS 28.0 (IBM Corp, 2021).

### 5.2. Preliminary analysis

Mothers and fathers did not differ in their ratings on the PPS scale,  $t(388) = 1.28, p = .201$ . Also, there was no effect of child’s sex on PPS scores,  $t(394) = 1.67, p = .097$ , so parents’ relationship to the child and child’s sex were excluded from subsequent analyses.

### 5.3. Age-related changes in procrastination

There was a small positive correlation between child’s age in months and PPS score,  $r(394) = .142, p = .005$ , indicating that children tended to show a greater tendency to procrastinate as they aged. Fuke et al. (2023) who analyzed different data from our current sample also showed that younger children (3- and 4-year-olds) were more likely to procrastinate on cleaning up messes and completing routines, whereas older children (4- and 6-year-olds) were more likely to procrastinate on doing chores and schoolwork. Given Fuke et al. (2023) found that younger and older children were different in the tasks they procrastinated, and children make the transition to school between these ages (i. e., 73% of older children were attending school, whereas 71% of younger children were attending daycare or preschool in the sample), we divided the sample into younger (3- and 4-year-olds) and older (5- and 6-year-olds) age groups while investigating the correlations between procrastination, personal characteristics and the home environment. Age was also included as an interaction factor in the regression

model. Descriptive statistics of all variables are presented in Table 1.

### 5.4. Procrastination and self-regulation

There was a large negative correlation between PPS score and the Hierarchical Personality Inventory for Children-Conscientiousness Scale even after controlling for age ( $r[393] = -.663, p < .001$ ). Also, there was a medium-sized negative correlation between the PPS and CBQ Effortful Control after controlling for age ( $r[393] = -.396, p < .001$ ; Table 2). Children with lower levels of conscientiousness and effortful control had a greater tendency to procrastinate. When we examined these correlations for younger and older children separately, the results remained the same.

### 5.5. Procrastination and negative affectivity

There was a medium-sized positive relation between CBQ Negative Affectivity and PPS score after controlling for age,  $r(393) = .396, p < .001$  (Table 2), suggesting that higher levels of negative affectivity were associated with greater procrastination tendencies. Moreover, in both younger and older age groups, negative affectivity was negatively related to PPS score.

### 5.6. Procrastination and the home environment

There was a significant medium-sized negative correlation between Parenting Styles and Dimensions Questionnaire-Democratic Participation subscale and PPS score,  $r(393) = -.233, p < .001$  (Table 2). Parents who allowed their children to be more involved in family decision-making had children with fewer procrastination tendencies. However, there was no significant correlation between the Directiveness subscale and PPS score,  $r(394) = .081, p = .108$  (Table 2). In both younger and older age groups, the same relations held.

A moderation analysis was run using the PROCESS macro in SPSS to examine whether parenting styles moderated the relation between negative affectivity and procrastination (Hayes, 2021). Parental education, family income, and child’s age (in months) were also included in the model as covariates. The model accounted for a significant variance in children’s PPS scores,  $F(8, 382) = 14.85, p < .001, R^2 = .237$ . CBQ Negative Affectivity was significantly related to PPS score,  $b = .478, t = 2.28, p = .023, 95\% \text{ CI } (.067, .890)$ . However, there was no evidence of moderation of democratic participation ( $b = -.118, t = -.26, p = .797, 95\% \text{ CI } [-.101, .077]$ ) or directiveness ( $b = -.069, t = -1.71, p = .089, 95\% \text{ CI } [-.149, .010]$ ).

Parental education and family income were our two indicators of family socioeconomic status. We found significant small negative correlations between PPS score, parental education ( $r[391] = -.134, p = .008$ ), and family income ( $r[391] = -.105, p = .038$ ) after controlling for age, suggesting that children whose parents had lower levels of education or income had greater procrastination tendencies. When we examined these correlations for younger and older children, a different pattern emerged. For younger children, there were no significant relations between PPS score, parental education, and family income. In contrast, there was a significant medium-sized negative correlation between parental education level and PPS score in older children,  $r(152) = -.297, p = .005$ . However, no significant correlation was found between older children’s PPS scores and family income.

### 5.7. Predictors of children’s procrastination

A linear regression was conducted to examine the links between children’s procrastination, personal characteristics, and the home environment. Child’s age, CBQ Negative Affectivity, CBQ Effortful Control, the Hierarchical Personality Inventory for Children-Conscientiousness Scale, the Parenting Styles and Dimensions Questionnaire Directiveness and Democratic Participation subscales,

**Table 1**  
Descriptive Statistics of All Measures.

	Younger Children (3- and 4-year-olds)		Older Children (5- and 6-year-olds)		Whole Sample			
	M	SD	M	SD	M	SD	Min	Max
Age	47.73	7.31	69.78	7.45	56.25	13.03	36.00	83.00
PPS	2.84	0.58	2.93	0.69	2.87	0.62	1.07	5.00
CBQ Negative Affect	4.06	0.86	4.27	1.02	4.14	0.93	1.67	6.67
CBQ Effortful Control	5.20	0.73	5.13	0.76	5.17	0.74	2.82	6.83
HiPIC Conscientiousness	3.33	0.82	3.31	0.89	3.32	0.84	1.17	5.00
PSDQ Democratic Participation	3.42	0.63	3.32	0.69	3.38	0.65	1.60	5.00
PSDQ Directiveness	2.76	0.80	2.78	0.79	2.76	0.80	1.13	5.00
Family Income	3.54	1.18	3.56	1.15	3.55	1.17	1.00	5.00
Parent Education	5.01	0.97	5.04	0.94	5.02	0.96	1.00	7.00

Note. PPS: The Preschool Procrastination Scale, CBQ: Child Behavior Questionnaire-Very Short Form, HiPIC: The Hierarchical Personality Inventory for Children-Conscientiousness Scale, PSDQ: The Parenting Styles and Dimensions Questionnaire.

**Table 2**  
Correlations Among All Measures.

	1.	2.	3.	4.	5.	6.	7.	8.
1. Child's Age (Months)								
2. PPS	.142**							
3. CBQ Negative Affect	.105*	.405** (.396**)						
4. CBQ Effortful Control	-.123*	-.407** (-.396**)	-.069 (-.057)					
5. HiPIC Conscientiousness	-.049	-.662** (-.663**)	-.227** (-.224**)	.466** (.465**)				
6. PSDQ Democratic Participation	-.099*	-.242** (-.232**)	-.103* (-.094)	.301** (.292**)	.268** (.264**)			
7. PSDQ Directiveness	-.015	.081 (.084)	.204** (.207**)	-.020 (-.022)	-.049 (-.050)	-.215** (-.218**)		
8. Parental Education	.007	-.132* (-.134**)	-.014 (-.027)	.045 (.046)	.225** (.226**)	.184** (.185**)	.123* (.123*)	
9. Family Income	.075	-.093* (-.105*)	-.019 (-.015)	.009 (.018)	.113** (.118*)	.070 (.078)	.092 (.093)	.372** (.372**)

Note. PPS: The Preschool Procrastination Scale, CBQ: Child Behavior Questionnaire-Very Short Form, HiPIC: The Hierarchical Personality Inventory for Children-Conscientiousness Scale, PSDQ: The Parenting Styles and Dimensions Questionnaire. Age-controlled correlations are in parentheses. \*  $p < .05$ , \*\*  $p < .01$ .

parental education, and family income were entered on the first step of the model. On the second step, all two-way interactions between variables and age were entered. On the third step, the two-way interactions among variables were entered into the model for exploratory reasons. Tolerance values were larger than .73, and VIF values were less than 1.5 for all predictor variables, indicating that there was no evidence of multicollinearity. The first step of the model accounted for significant amount of variance in children's PPS score,  $F(8, 382) = 54.68, p < .001, R^2 = .534$ . Step 1 of the model showed that child's age, the Hierarchical Personality Inventory for Children-Conscientiousness Scale, CBQ Negative Affectivity, and CBQ Effortful Control were significantly related to procrastination (Table 3). The Hierarchical Personality Inventory for Children-Conscientiousness Scale has the largest effect size ( $\beta = -.524$ ), followed by CBQ Negative Affectivity ( $\beta = .268$ ), CBQ Effortful Control subscales ( $\beta = -.132$ ), and age ( $\beta = .072$ ; Table 3). However, parenting styles, parental education, and family income were not significantly related to procrastination after controlling for personal characteristics. The inclusion of interactions on steps 2 and 3 did not significantly increase the explained variance.

**6. Discussion**

The current study used Bronfenbrenner's bioecological framework to investigate the associations between childhood procrastination, personal characteristics (i.e., self-regulation and negative affectivity), and

**Table 3**  
Predictors of Children's Procrastination.

Effect	$\beta$	b	SE	95% CI		p
				LL	UL	
Child's Age (months)	.072	.003	.002	.000	.007	.044
CBQ Negative Effect	.180	.268	.025	.131	.229	<.001
CBQ Effortful Control	-.132	-.112	.035	-.181	-.044	.001
HiPIC Conscientiousness	-.524	-.389	.031	-.450	-.327	<.001
PSDQ Democratic Participation	-.036	-.035	.037	-.108	.038	.348
PSDQ Directiveness	-.001	-.001	.029	-.059	.057	.975
Parental Education	.013	.009	.026	-.042	.059	.732
Family Income	-.034	-.018	.020	-.058	.022	.375

Note. CBQ: Child Behavior Questionnaire-Very Short Form, HiPIC: The Hierarchical Personality Inventory for Children-Conscientiousness Scale, PSDQ: The Parenting Styles and Dimensions Questionnaire. Age-controlled correlations are in parentheses.

aspects of the home environment (i.e., parenting style and socioeconomic status) to capture the elements of the microsystem and exosystem. Individual differences in 3- to 6-year-old children's procrastination were negatively related to conscientiousness, effortful control, democratic participation, parental education, and family income and positively

related to negative affectivity. When children were divided into two groups of younger (3- and 4-year-olds) and older children (5- and 6-year-olds), the relations remained the same across age groups except for family socioeconomic status. Neither parental education nor family income was related to young children's procrastination. However, parental education (but not family income) was negatively correlated with older children's procrastination. In a final regression model, children's procrastination was associated with their age, conscientiousness, effortful control, and negative affectivity. Higher levels of conscientiousness and effortful control and lower levels of negative affectivity were associated with less of a tendency to procrastinate. Parenting style and family socioeconomic status were not statistically significant predictors in the regression model. Children's personal characteristics seem to have more weight in the ecological model of procrastination compared to factors of the microsystem and exosystem (i.e., the home environment).

### 6.1. Procrastination and self-regulation

Adult procrastinators delay their responsibilities despite the negative consequences of postponing a task to a future point in time, reflecting that procrastination might be a component of poor self-regulation (e.g., Steel, 2007). In the current study, lower levels of conscientiousness and effortful control were associated with a greater tendency to procrastinate in young children suggesting that this relation exists early in development.

Although conscientiousness and effortful control were highly correlated (Table 2), the standardized effect size of conscientiousness on procrastination was larger than that of effortful control (Table 3). Thus, conscientiousness may play a distinct role in procrastination beyond self-regulation. Lay et al. (1998) argued that procrastination might be best understood as a lack of conscientiousness and might represent a behavior commonly seen in individuals at the low endpoint of the conscientiousness personality trait. In contrast with our conscientiousness measure that only included a single subscale, the CBQ Effortful Control subscale contained four subfactors: inhibitory control, attention focusing, low intensity pleasure, and perceptual sensitivity (Putnam & Rothbart, 2006). These different subfactors might be differentially related to procrastination and this might have weakened the relation between effortful control and procrastination. In fact, the items assessing low intensity pleasure ( $r[394] = -.162, p = .001$ ), perceptual sensitivity ( $r[394] = -.141, p = .005$ ), and attention focusing ( $r[394] = -.170, p < .001$ ) were only weakly correlated with procrastination, whereas a much larger correlation was found between procrastination and the items assessing inhibitory control,  $r(394) = -.367, p < .001$ . Fisher's z-tests confirmed that the correlations between procrastination, low intensity pleasure, perceptual sensitivity, and attention focusing were statistically significantly smaller than the correlation between procrastination and inhibitory control,  $z_s > 2.376, p_s < .003$ . In contrast, there were consistently large negative correlations between the conscientiousness and procrastination items ( $r_s[394]$  ranging from  $-.266$  to  $-.553, p_s < .001$ ). Thus, the effect size of effortful control was smaller than conscientiousness, because certain aspects of effortful control were weakly related to procrastination.

### 6.2. Procrastination and negative affectivity

The Appraisal-Anxiety-Avoidance model suggests that when adults perceive a situation as threatening and do not have adequate resources to cope with the threat, they show a stress reaction. This adverse emotional response may cause them to avoid the situation by procrastinating (Milgram et al., 1989, 1998). The present study tested this model in 3- to 6-year-old children and found that negative affectivity was strongly associated with a greater tendency to procrastinate in young children. Further, this link between negative affectivity and procrastination was not moderated by parenting style, indicating that

negative affectivity might be fundamental in the development of procrastination independent of parenting. Children with higher levels of negative affectivity might feel unequipped to complete a task and experience stronger negative emotions in response to an undesirable task, leading them to avoid responsibilities by procrastinating. Future work should examine the extent to which anxiety drives procrastination behavior in young children than other more mundane factors such as a lack of motivation or boredom.

### 6.3. Procrastination and the home environment: Parenting style

At the level of the microsystem, the current study focused on the role of parenting style. We measured the directiveness and the democratic participation parenting style, and democratic participation but not directiveness was negatively correlated with children's procrastination. However, when personal characteristics and family socioeconomic status were controlled for, neither democratic participation nor directiveness was related to procrastination. We also examined if parenting style moderates the relation between negative affectivity and procrastination, but we found no evidence of moderation even though the relations were in the expected direction.

There are a few explanations for these null findings. First, it is possible that parenting might not be strongly associated with young children's procrastination as the dimensions of their personality and temperament, but the link between parenting and procrastination might become stronger later in development, as school-aged children and adolescents have spent more time interacting with their parents (Zakeri et al., 2013). Second, parents in our sample provided low ratings on the directiveness scale (e.g., "They demand that our child do things."; see Table 1). Only 8.1% of the sample used scores of 4 (refers to "very often" on the scale) or higher. Thus, we had limited variability in directiveness due to a social desirability bias or perhaps in our homogeneous middle-class sample there were very few parents who were in fact high in directiveness. Third, it is possible that other aspects of parenting (not focused on in our current study) are more related to procrastination. For example, autonomy support might have a stronger influence on children's procrastination tendencies. Parents high in autonomy support are more likely to provide more opportunities for their child to make their own decision (e.g., Grolnick & Apostoleris, 2002). Moreover, adolescents whose parents were high in autonomy support tended to manage their time better and procrastinate less than their peers whose parents low in autonomy support (e.g., Won & Yu, 2018). As such, parental autonomy support might better explain individual differences in young children's procrastination and also might moderate links between negative affect and procrastination.

### 6.4. Procrastination and the home environment: Family socioeconomic status

Family socioeconomic status is another home environment factor influential in child development at the level of the exosystem. We assessed parental education level and annual family income as indicators of family socioeconomic status and expected to find negative relations between family socioeconomic status and child procrastination, as low family socioeconomic status has been linked to poor emotion control, self-regulation (e.g., Bradley & Corwyn, 2002), and environmental unpredictability (Grisevicius et al., 2011). Our findings partially supported our prediction. Although we found small negative correlations between procrastination, parental education, and family income (Table 2), the relations did not remain statistically significant after controlling for self-regulation, negative affectivity, and parenting styles in the regression model. Also, when children were divided into groups of younger and older children, we found that only older children whose parents had lower levels of education tended to show greater procrastination tendencies. There was no relation between procrastination, parental education, and family income in younger children. It is

possible that the effects of socioeconomic status (especially parental education) on children's development become more strongly associated with procrastination later in development. Life-history theory argues that throughout development, individuals learn more about the predictability of their environment and begin to adopt fast and slow strategies (Del Giudice et al., 2015). Thus, we would expect that parent's education level might be more strongly related to older children's procrastination, but not to younger children's procrastination because young children are still learning about the predictability of their environment. For example, Ward et al. (1997) found an interaction between age and socioeconomic status in children's saving preferences. In the study, 70% of high-socioeconomic status third-grade children recommended long-term saving over short-term saving, whereas this percentage dropped to 50% in low- and middle-socioeconomic status third graders, indicating an influence of socioeconomic status on older children's future-oriented decisions. However, the effect of socioeconomic status was not present in kindergarten children: their saving preferences did not differ based on their socioeconomic backgrounds (Ward et al., 1997). Third graders from high-socioeconomic status backgrounds might have adopted slow strategies and understood and preferred the long-term benefits of saving, whereas their peers from low- and middle-socioeconomic statuses might have already learned to adopt fast strategies and preferred short-term benefits. Along similar lines, family socioeconomic status might be more robustly associated with procrastination only in older children who have had more experience in their environment and have had a chance to learn about the reliability and availability of resources. It is also possible that parental support and supervision (factors that are associated with parental education) begin to influence children's procrastination tendencies later in the early childhood years and thus this relation can only be observed in older children.

Importantly, our sample had limited variability in socioeconomic status as most of the parents were well-educated and had a higher income. Nevertheless, a significant negative correlation between socioeconomic status and procrastination was observed even in this middle- to high-socioeconomic status sample for older children. Future work might examine their relation in a more economically diverse sample. Family socioeconomic status might even play a stronger role in a sample including more families living at or below the poverty line where children might more quickly learn about environmental unreliability.

### 6.5. Limitations and future directions

This current study had some limitations. Due to the restrictions of the COVID-19 pandemic, our measures consisted of parent-report questionnaires only and thus relied on a single informant. Parents provided the data about their child's procrastination, temperament, personality, their parenting, and socioeconomic status so a limitation of this study was both its single-informant and single method (questionnaire) approach. Although past research has shown that parents can accurately report their young children's everyday abilities and behaviors (e.g., Mazachowsky & Mahy, 2020), parents might still be biased in their reports. For instance, parent and teacher reports of school-aged children's procrastination are only moderately correlated (Scher & Osterman, 2002), suggesting that: (1) parents might be less accurate in accessing procrastination in academic settings, or (2) that parents and teacher's witness different types of procrastination at school and home which leads to this moderate correlation. Further, relations among the questionnaire measures in the study might have been artificially inflated because data was collected from a single informant. Future research would benefit from collecting parent reports, teacher (or other adult) reports, as well as children's behavior to ensure a more accurate and ecologically valid measure of children's procrastination and to overcome any potential biases from a single informant reporting in a similar format (via questionnaires).

The data was also collected from participants who were recruited via

Prolific online participant pool. This participant pool had limitations in that it did not attract a very diverse sample as participants had to have access to a computer and reliable internet connection. Further, this study was subject to the usual limitations of online research: it is difficult to tell how much participants are engaged and paying attention, although we did include attention check questions that participants completed accurately, and there is evidence to suggest that Prolific participants are generally provide reliable and honest responses (Peer et al., 2017).

Preschool children's procrastination was explained mainly by their self-regulation and negative affectivity, but not by aspects of their home environment (i.e., socioeconomic status and parenting). Thus, early childhood procrastination might be a behavioral trait strongly linked to personal characteristics, which is in line with adult procrastination models: self-regulation (Steel, 2007) and the Appraisal-Anxiety-Avoidance model of procrastination (Milgram et al., 1988). However, more research is needed to reach such a conclusion. First, we only examined self-regulation and negative affectivity as personal characteristics, but there are other personal characteristics, such as self-esteem or intelligence that might also be associated with procrastination (Steel, 2007). Also, we only investigated a few factors from each microsystem (i.e., parenting style) and exosystem (i.e., parental education and family income). However, other ecological systems might explain childhood procrastination and the role of personality characteristics. For example, types of tasks that children procrastinated on differed as they aged: young children were more likely to procrastinate cleaning up messes and completing routines, whereas older children procrastinate more on chores and schoolwork (Fuque et al., 2023). Thus, environmental changes that occur over the life course (*the chronosystem* in the ecological model; Bronfenbrenner & Morris, 2006) might explain these domain changes in children's procrastination. Also, recent studies show the contribution of social norms to children's self-regulation: Three- to 5-year-old children delayed gratification for a longer period of time when they were told that their in-group members delayed, and their out-group did not delay compared to their peers who believed that their in-group members did not delay but their out-group delayed (Doebel & Munakata, 2018). As such, social groups and norms may also play a role in children's procrastination. For example, children with peers who procrastinate on schoolwork might model their behavior and procrastinate more on academic domains compared with others whose peers do not engage in procrastination. Indeed, procrastination-friendly environments (e.g., procrastinating peers and lax teachers) led to greater procrastination in college students (Nordby et al., 2017). Thus, research on the influence of other systems is needed to better understand the nature of the behavior.

Our findings suggest that procrastination is common in 3- to 6-year-old children. Further, it is related to temperament and personality in early childhood suggesting that to the extent that these are stable characteristics, procrastination might also remain stable over the lifespan (Steel, 2007). Thus, developing chronic procrastination tendencies in early childhood might have adverse future outcomes. For example, children putting off schoolwork or personal care might experience academic underachievement in school or health problems later in development. Indeed, greater academic procrastination in childhood was positively associated with the number of school years failed (Rosário et al., 2009) and predicted their dental health (e.g., remaining teeth) in older adulthood, even after controlling for their socioeconomic status, self-regulation, and smoking and drinking habits (Shimamura et al., 2022). Future research could explore longitudinal outcomes of early childhood procrastination to better understand the mechanisms that link childhood procrastination to long-term negative outcomes. Adult procrastination is strongly linked to stress levels (e.g., Flett et al., 1995) and associations between procrastination, health, and treatment delay (e.g., hospital visits) are mediated by stress levels (Sirois et al., 2003). Similarly, stress or emotion regulation might mediate the relation between childhood procrastination and its adverse outcomes. Future work should



investigate whether emotion regulation skills can protect children who procrastinate from negative longer-term outcomes such as academic underachievement or poorer health.

Finally, more research is needed to investigate interventions to reduce young children's procrastination behavior, especially if it does predict negative outcomes in adulthood. Our study suggested that self-regulation and negative affectivity were strongly associated with childhood procrastination. Therefore, strategies aimed to improve children's performance in these domains might also decrease their tendency to procrastinate. For example, self-distancing strategies are often found to improve children's performance in tasks that required self-regulation (Karniol et al., 2011; White et al., 2017). Preschool children waited longer in the classic delay of gratification task when they wore a cap and pretended to be Superman than their peers who did not (Karniol et al., 2011). This self-distancing technique might be applied to the domain of procrastination to decrease young children's tendency to procrastinate and increase their motivation to complete the current tasks.

## Conclusion

In sum, the present study took an ecological approach to examine the development of procrastination. Self-regulation and negative affectivity, with the largest effect sizes, explained individual differences in young children's procrastination tendencies, whereas parenting style and family socioeconomic status (i.e., parental education and family income) were not significant predictors of procrastination once personal characteristics were controlled for. Further, when these relations were explored in younger and older children separately, we found that parental education was negatively related to procrastination only in older children suggesting that socioeconomic status may explain individual differences in procrastination with age. Future studies should continue to adopt an ecological approach to study various personal and contextual influences on the development of procrastination behavior in early life.

## Data statement

The data and the analytic code necessary to reproduce the analyses presented here are accessible upon request from the first author. The materials necessary to attempt to replicate the findings presented here are accessible upon request from the first author. The analyses presented here were not preregistered.

## CRedit authorship contribution statement

**Ege Kamber:** Writing – original draft, Methodology, Formal analysis. **Taissa S.S. Fuke:** Data curation, Writing – review & editing. **Melissa Alunni:** Conceptualization, Methodology, Writing – review & editing, Writing – original draft. **Caitlin E.V. Mahy:** Conceptualization, Supervision, Writing – review & editing, Funding acquisition.

## Declarations of Competing Interest

None.

## Data availability

Data will be made available on request.

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## Appendix

### Preschool Procrastination Scale

People may use the following statements to describe their child. For each statement, decide whether the statement is uncharacteristic or characteristic of your child using the following 5-point scale. Note that the 3 on the scale is Neutral – the statement is neither characteristic nor uncharacteristic of your child. In the box to the right of each statement, fill in the number on the 5-point scale that best describes your child.

Extremely Uncharacteristic = 1 Moderately Uncharacteristic = 2  
Neutral = 3 Moderately Characteristic = 4 Extremely Characteristic = 5

1. I often find my child performing tasks that he/she intended to do days before. (e.g., cleaning their room)
2. My child does not complete tasks until just before they have to be completed. (e.g., packing some toys or games for an upcoming vacation)
3. When my child has something to return, he/she returns it right away regardless of when it needs to be returned. (e.g., returning a toy borrowed from a friend)
4. When it is time to get up in the morning, my child most often gets right out of bed. (e.g., child wakes up right at 7 o'clock when they are woken up)
5. Even with tasks that require little else except sitting down and doing them, my child puts off getting them done for days. (e.g., puts off completing a puzzle or other activity)
6. My child usually make decisions as soon as possible. (e.g., quickly chooses a toy at the store)
7. My child generally delays before starting on tasks that he/she has to do. (e.g., getting ready for bed)
8. My child usually rushes to complete a task on time. (e.g., putting toys away)
9. When preparing to go out, my child is seldom caught having to do something at the last minute. (e.g., going to the bathroom)
10. My child often wastes time by doing other things, instead of completing the task at hand. (e.g., requesting a snack instead of completing a task)
11. My child prefers to leave early for appointments and playdates. (e.g., is at the door ready to go a few minutes early)
12. My child usually starts a task shortly after it is given to them. (e.g., begins task right away)
13. My child often has a task finished sooner than necessary. (e.g., completes a birthday card well in advance of a relative's birthday party)
14. My child usually accomplishes all the things that he/she plans to do in a day. (e.g., completes planned activities)
15. My child continually says "I'll do it tomorrow". (e.g., child says "I'll clean my room later")

**Note:** Reverse-keyed items: 3, 4, 6, 8, 9, 11, 12, 13, 14.

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