Age Differences in Young Children's Strategies for Regulating Frustration

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Abstract

In early childhood, effortful self-regulation, including self-regulation of emotions, first emerges. Our lab defines self-regulation as the influence of the engagement of intrinsic (e.g., cognitive) resources on changes in prepotent responses. We tested theoretically driven hypotheses that there are age differences in young children's intensity of frustration (less intensity with age), extent of cognitive resources in their strategic efforts (use of more cognitive resources with age), and the relation between these (more related with age). The participating 154 children were between the ages of 30-60 months old. Video records of their behavior during the Transparent Locked Box (LB) procedure, which induces mild frustration, were later coded by two independent teams to rate (a) anger and sadness intensity and (b) extent of engagement of cognitive resources. Results indicate that sadness increased as age increased, and their relationship was modestly significant. Increasing age revealed a positively correlated relationship with anger. Age and engagement of cognitive resources in strategies used had no relationship. Anger decreased as engagement of cognitive resources increased and one partial effect for sadness decreasing with engagement of cognitive resources was also found. The results are discussed in relation to both prior and future research.

Background

For the past few decades, self-regulation has become a focal point of empirical research in the social sciences and particularly in psychology. Much of this scientific attention can be attributed to the evidence that self-regulation plays a central role in psychological functioning. Namely, self-regulation is a central factor among all age groups and in relation to multiple areas of human functioning, including physical and mental health and adaptive functioning in relationships and in work and academic performance. For example, across different ages, self-regulation plays a role in psychopathology (Kring & Sloan, 2009), academic achievement (Graziano et al., 2007), interpersonal functioning (Rawn & Vohs, 2006), and both school readiness and academic achievement (Blair, 2002; Blair & Diamond, 2008; McClelland & Cameron, 2012) to name a few prominent outcomes. In sum, the evidence establishes self-regulation as a crucial aspect of overall human functioning and growth.

Within the American society, there is a general expectation that children learn how to effectively self-regulate their emotions, at least in terms of common, frequent challenges, by the time they are school age. Thus, a developmental perspective is essential to a full understanding of self-regulation. The prevailing developmental viewpoint is that children's emotion regulation can be managed extrinsically or intrinsically (Grolnick & Ryan, 1989). Specifically, in the earliest years of life, extrinsic, or external, factors drive regulation of well-being, e.g., resolving distress, and with development intrinsic, or internal, factors contribute to effortful self-regulation. This developmental shift from reliance on extrinsic factors to the emergence of autonomous, self-initiated efforts drawing on intrinsic factors marks the beginning of self-regulation (Kopp, 1982). Evidence largely supports this developmental framework, for example, 5-month-old infants engage in some spontaneous but highly limited self-regulatory efforts (August et al., 2017), by age 36 months children begin to engage in autonomous effortful self-regulation (e.g., Cole et al., 2011), and self-regulation continues to develop even throughout adulthood (Gross & John, 2003). Our study focuses on one specific age period—early childhood. This period is important because it is when effortful self-regulation has been observed to initially emerge, between children's third and fourth birthdays. Moreover, we are specifically interested in testing predicted relations between age and emotional reactions to challenges, age and strategy use during those challenges, and importantly, age and the relation between emotional reactions and strategy use.

Whereas prior research on young children's strategy use describes the strategies they attempt (e.g., Grolnick et al., 1996), we broadly consider the fact that strategies changes across age are due, in part, to intrinsic factors, namely the development of a range of cognitive resources, including language, inhibitory control, and planning, to name a few. Related concepts such as emotional regulation, executive attention, inhibitory control, and other concepts are often invoked when considering self-regulation (Kopp, 2009). These related concepts can be regarded as constituent components of self-regulation (Gagne, 2021, Carlson & Wang, 2007; Liew, 2012). Most studies focus on constituent components, such as the components of executive functioning (Blair & Diamond, 2008) or executive attention, which involves the ability to control attention regardless of environmental conditions (Posner & Rothbart, 2000). Another example is effortful control or the ability to carry out a secondary response in the place of a primary response (Rothbart et al., 2003). All these constituent components develop substantially throughout early childhood.

More importantly for this paper, Kopp (1982) provided a widely used framework for self-regulation from a developmental lens. She described the roles that intrinsic and extrinsic factors play in the emergence of self-regulation in children. Generally, extrinsic factors, such as caregivers, provide expectations and socialize children through modeling, reacting, and teaching about self-regulation. These extrinsic influences include caregiver efforts to help children draw on their own intrinsic factors, until children can autonomously draw on their internal, i.e., cognitive, resources without caregiver assistance. With experience and maturation, young children begin to achieve self-regulation and rely less on the influence of others.

Self-Regulation of Emotion

Our lab defines self-regulation as the influence of the engagement of intrinsic (e.g., cognitive) resources on changes in prepotent responses. Where most child development research focus on differences between children, this is a within-person approach that locates regulation in the *relation* between engaging those resources and prepotent responses. This ability is important in meeting social demands through a set of culturally normative behaviors. There is no set list of appropriate behaviors, but studies highlight different apposite behaviors that should be appropriate in particular situations. There is a substantial history of research on children's self-control or self-regulation, and these have taken varied approaches to defining and measuring self-control or self-regulation. Most however focus on children's ability to begin or end behaviors to meet caregiver expectations or to modulate those behaviors in terms of strength, reoccurrence, and length (Kopp, 1989). This wide range of behaviors establish the scope of self-regulation, but the diversity of approaches has made it difficult to reach a single standard definition of self-regulation.

To try to move research towards a single standard, the National Institutes of Health (NIH) called for research to address this problem. In our lab, we tackled this need by drawing a common theme in many models of effortful, "top-down" self-regulation in the adult social and child developmental subdisciplines of psychology (Cole et al., 2019). That is, our lab defines self-regulation as the influence of the engagement of intrinsic (e.g., cognitive) resources on changes in prepotent responses. Whereas some prior studies interpret more frequent or more intense negative emotion as evidence of poorer emotion regulation, and some studies interpret more frequent or more varied use of strategies as evidence of better emotion regulation, our perspective focuses on the relation between those cognitive resources, as indexed by strategies, and prepotent responses, as indexed by the emotions that structured laboratory tasks are designed to elicit.

Prepotent responses are behaviors that are highly likely given the situational circumstances (Arnold, 1960). These responses are spontaneous and relatively automatic, occurring without much effort. For example, in the situation of a sudden, imminent car collision, the prepotent responses include spontaneous slamming on the brakes or swerving into another lane, i.e., spontaneous withdrawal from threat. These are adaptive responses that do not require time to recall, reason, or plan. The surge of fear that one feels in such a threatening situation is an example of a prepotent emotion. Situations that block a person from achieving a goal, e.g., after depositing money, your snack gets stuck in a vending machine, elicit prepotent anger. Notably, depending on the situation, however, prepotent responses like fear or anger can be troublesome if they challenge or do not conform to family or cultural norms. For example, in the event of an imminent car collision it would be culturally inappropriate to collide with the other vehicle and

then drive off immediately. Thus, it is important for persons to be able to regulate prepotent responses in accordance with social constraints and cultural norms.

To engage in *self-regulation* of prepotent responses, i.e., to not act on a prepotent response or to change it by reducing or resolving it, children must draw on their own resources. Infants can draw on some spontaneous, less effortful strategies such as gaze aversion, e.g., looking away when a stimulus increases state arousal beyond a comfortable point. However, effortful self-regulation requires engaging cognitive resources, i.e., recruiting intrinsic capacities that can serve to modulate prepotent responses. For example, in the situation of a sudden imminent car collision, an effortful self-regulation strategy could include checking the blind spot before swerving into another lane. The transition from acting on unmodulated prepotent responses to actively regulating them is marked by using executive cognitive processes (Hoffman et al., 2012; Miyake et al., 2000). In early childhood, this transition is marked by the emergence of top-down regulation involving cognitive resources that serve as executive processes rather than reliance on more automatic bottom-up regulation, such as infant gaze aversion, or on caregiver behavior (Bridgett et al., 2015; Eisenberg et al., 2013).

As noted, emotions can be prepotent responses. In early childhood, children may display negative emotions when their circumstances elicit prepotent anger and sadness, such as not receiving what they expected and wanted (Cole, 1986) or not being able to do what they want (Vaughn, Kopp, & Krakow, 1984; Ramsook et al., 2019). Both negative and positive emotions are adaptive, enabling humans to cope with a range of circumstances (Mandler, 1982). Recognizing this is crucial as it acknowledges that emotions offer their own set of benefits. However, prepotent negative emotions can lead to actions that are troublesome (Kopp, 1989). In early childhood, children learn to differentiate when emotions can and should not be expressed, including in situation involving common disappointments and frustrations (Saarni, 1998). Effortful self-regulation requires the use of strategies that can modulate—forestall, minimize, or resolve—prepotent emotional reactions (Cole et al., 2019).

Given the role of cognitive resources in serving as an executive influence on enacting prepotent responses, we propose an alternative approach to measuring self-regulation. As we discuss, rather than describe whether children engage in strategies or which strategies they appear able to initiate, we take a dimensional approach, assessing the extent to which any strategy draws on intrinsic cognitive resources. That is, building on work that suggests that specific strategies are useful in specific situations, we do not describe strategies but rate them on the extent to which cognitive resources are being utilized. Next, we discuss further the conceptualization and measurement of strategies,

Age Differences: Emotions and Strategies

The term strategy refers to the behaviors that young children enact, which have potential to influence their emotions (Grolnick et al., 1996). Ample evidence exists that young children engage in behaviors that are putative strategies, supporting Kopp's (1989) postulation that effortful self-regulation of negative emotions and distress first emerges in early childhood. To summarize her developmental framework, around the third to fourth year of life, children become able to draw on their developing internal resources, largely cognitive advances, to attempt to engage in effortful self-regulation. Those internal resources, coupled with learning through socialization experiences, enable them to attempt to self-regulate prepotent responses including prepotent emotions.

Negative emotions, particularly anger, frustration, and sadness, are imperative for adaptive coping (Mandler, 1982; Kopp, 1989). Children must integrate these experiences to continue to develop their self-regulation skills. Successful integration should result in a decrease in negative emotion reactivity with increasing age. Mechanisms that allow for this transition away from negative emotions vary between ages. The decline in emotional reactivity, particularly of negative emotions, is thought to be due to the increase in the capacity to engage in "regulatory" strategies.

So-called regulatory strategies develop with age over the course of the first five years of life (and beyond). Infants must rely primarily on their caregivers to regulate negative emotions; they have only a few self-regulatory strategies that occur automatically and are limited in effectiveness. Specifically, strategies such as thumb-sucking (Gunnar, 1986; Gunnar, Fisch, & Malone, 1984) and spontaneous gaze aversion are observed during infancy (Braungart & Stifter, 1991; Field, 1977; Fogel, 1982; Gianino & Tronick, 1988; Waters, Matas, & Sroufe, 1975).

As children transition into toddlerhood, they display what Kopp (1982) called self-control, the ability to alter their behavior when adults require it of them. Self-regulation, she posited, emerges around age 3 to 4 years, when children have more internal resources to engage to behave in ways that conform with social expectations and constraints. Kopp's (1982) view that infants engage simpler, more automatic, strategies and more complex, effortful strategies emerge as children reach the preschool age years, is largely accepted (Calkins should also be referenced here; Fox, 1989; Gianino & Tronick, 1988). Therefore, we predict that there should be age differences in children between the ages of 30 months and 60 months in the extent to which they engage cognitive resources in their behavior when coping with frustration

Negative emotions, and behaviors, have been observed to be related to developmental changes (Saarni, 1984; Liebermann et al., 2007). Distinctively, older children modulate the intensity of their emotions more successfully than younger children. This inverse correlation between emotion intensity and age is due to the variation in engagement of cognitive resources. We hypothesize that with increased age this correlation will strengthen because children with have more strategies to employ for self-regulation. This prediction is based on previous data that points to possible age-related changes in self-regulation (Kopp, 1989).

The Present Study

The significance of understanding more about how age relates to self-regulation in early childhood stems from societal expectations. When children begin kindergarten, it is expected that they are appropriately prepared to handle school demands. Self-regulation of basic frustrations is an important aspect of socioemotional school readiness. When these children are not able to manage ordinary frustrations, like not receiving something they want, it is often identified as problematic by teachers and parents. This study should reveal the average age at which children are able to manage frustration when their goal, to retrieve a toy, is thwarted and how much age variation there is in this skill.

In early childhood, effortful self-regulation, including self-regulation of emotion, first emerges as I mentioned earlier. This study seeks to test age differences in the extent to which young children engage internal cognitive resources to cope with frustration. There are three hypotheses: (1) children will be less angry during the Lock Box task as they age; specifically, the overall anger intensity during the task will be inversely associated with child age in months, (2) children's use of strategies that engage their internal cognitive resources will occur more

frequently with age, and (3) the more frequently children use higher order strategies, the less frequently they will express frustration.

Methods

Participants

Participants in this cross-sectional study of how emotion regulation develops across early childhood (Dynamics of Self-Regulation Study; Cole et al., 2019) were 154 children (49.1% female) age 30 to 60 months (M_{Age} = 44.73, SD_{Age} = 8.24) and their caregiver(s). Families recruited from communities in central Pennsylvania had on average, annual income of $89,665 ($SD_{Income}$ = $50,210). The children mostly resided in two-parent homes (89.9%) and were described by their parents as White (94.3%), Asian (2.5%), Black (1.3%), and Native American (0.6%). The parents mostly had at least some college education (83.35%) and described themselves as working full-time (65.4%), working part-time (11.95%), working, and attending school (1.85%), attending school full or part-time (1.6%), or unemployed (13.8%).

Both caregivers (mother and father in most cases) were encouraged to participate in the study visit. While baseline questionnaires were completed by both parents in XX% of families, only 64.8% of study visits were attended by both parents, 34.6% were attended by mothers only, and 0.6% were attended by fathers only.

Procedures

The RA asked the child to choose a toy they would like to take home. The options included small toys such as cars, animals, Disney characters, and Care Bears. The RA then put the chosen toy inside a transparent box with a padlock, locked the box, and instructed the child how to open the box using a key. After giving the child the opportunity to unlock the box on their own (which ensured that they understood the instructions), the RA locked the box again, and told the child that she needed to leave to do some other work. Before leaving the room, the RA said, “Okay great, I will be back in a little bit. Now you can open the box and get [name of toy]. Remember, you have to open the box to get [name of toy]. I’ll be right back.” and handed the child the key ring, which unbeknownst to the child had been swapped with keys that would not unlock the box. The child was left alone to try to open the box for 2 minutes. Then, the RA returned, commenting on the fact that the box had not been opened yet. told the child to keep trying, and left for another 2 minutes. The RA entered the room again, commented that the box had still not been opened, and gave the child a different wrong key to try, and left again. After an additional 2 minutes, the RA returned to the room and asked the child, “Did you open the box? Why couldn’t you?” before giving the child the correct key and explaining that she must have accidentally given them the wrong key before. She then helped the child use the correct key to open the box and retrieve the desired toy. Children’s behaviors were videotaped throughout the task.

Results

This study focused on three hypotheses. The first two hypotheses predicted that (1) the intensity and dominance of frustration—i.e., anger and sadness—would decline with age and (2) the extent of engagement of cognitive resources would increase with age. Third, we predicted that as the engagement of cognitive resources increased, frustration intensity and dominance would decrease, and that this association would be moderated by age, specifically strengthened with age.

To test these hypotheses, we used bivariate correlations and partial correlations to test the moderation hypothesis. The results yielded some support for the hypotheses, revealed significant relations that were not predicted, and did not support other predictions.

Descriptive statistics for all study variables are presented in Table 1. In general, the preschool age children in this sample expressed relatively low levels of anger and sadness and did not express high levels of frustration (e.g., tantrums) during the Lock Box task, although across the children the full range (0-200) was observed in most segments. Similarly, the children in general did not engage in high levels of cognitive resources in coping with the locked box, although again the full range of scores (0-4) was used. The skew and kurtosis statistics indicate that the distributions were not normal and so the hypotheses were tested with Spearman *rho* bivariate correlations.

Table 1. Means, Standard Deviations, and Ranges for Main Study Variables

1a. Age, Negative Emotion Intensity, and Strategy Level

	M (SD)	Range
Age in months	44.99 (08.24)	29.7-60.3
Anger Expressions per Segment		
1	6.57 (08.06)	.00-149.65
2	8.40 (11.67)	.00-162.05
3	7.25 (12.88)	.00-200.00
Sadness Expressions per Segment		
1	17.79 (24.41)	.00-200.00
2	35.72 (34.53)	.00-200.00
3	39.01 (33.10)	.00-200.00
Strategy Rating per Segment		
1	1.82 (0.20)	0-4
2	1.93 (0.20)	0-4
3	1.93 (0.22)	0-4

1b. Emotion Dominance

	M (SD)	Range
Anger Expressions per Segment		
1	.194 (.209)	.00-0.808
2	.215 (.259)	.00-1.000
3	.176 (.236)	.00-0.966
Sadness Expressions per Segment		
1	.278 (.279)	.00-1.000
2	.507 (.336)	.00-1.000
3	.550 (.313)	.00-1.000

Frustration intensity and dominance and child age. As seen in Table 2, Spearman bivariate correlations present a mixed picture in terms of the hypothesis that frustration intensity and dominance decrease as child age increases. Seven of the 12 correlations between age and emotion intensity or dominance reached significance. However, only one of the seven significant correlations was in the predicted direction.

First, contrary to prediction, anger increased in intensity and dominance as child age increased. Specifically, there is small but significant associations between child age and anger intensity and dominance in Segment 1 and these appear to get somewhat stronger in Segments 2 and 3. In contrast, only one of the 6 correlations between age and sadness reached significance. A small but significant inverse association emerged for child age and sadness intensity but only in Segment 3. Although this association is consistent with the hypothesis, one must consider that this could have occurred by chance given the number of correlations conducted.

Extent of cognitive resources engaged and child age. Table 2 also reveals that, contrary to prediction, Spearman bivariate correlations yielded no support for the hypothesis that older children would engage more cognitive resources when coping with the Transparent Locked Box procedure. There are two correlations that approach significance – in Segments 1 and 2 – however, the direction of the relation changes between these two segments.

Table 2. Spearman correlations for age with negative emotion intensity and dominance and with strategy level

Lock Box Segment	1	2	3
N	154	154	153
Age * Anger			
Intensity	**.147**	**.267**	**.253**
p	.035	.001	.001
Dominance	**.179**	**.275**	**.253**
p	.013	.001	.001
Age * Sadness			
Intensity	-.013	-.094	**-.146**
p	.322	.123	.037
Dominance	-.038	-.112	-.131
p	.053	.084	.322
Age * Strategy Level			
Intensity	-.118	.122	.096
p	.073	.067	.119

Note. One child is excluded from segment 3 because the child was so distressed the segment was terminated. Correlations that were significant at $p < .05$ are bolded.

Relation between frustration intensity and dominance and extent of engagement of cognitive resources in strategy use and moderation by age. Table 3 provides the Spearman bivariate correlations testing relations between the extent of engagement of cognitive resources, i.e., strategy level, and anger and sadness intensity and dominance. The results support the hypothesis that strategy use that engaged more cognitive resources is associated with less

frustration but only for sadness, both in terms of intensity and dominance. Contrary to prediction, the more intense and dominant children's anger, the more children engaged cognitive resources in their coping with the Locked Box.

Finally, we predicted that age may strengthen the relation between increased engagement of cognitive resources in strategy use and decreased frustration. Table 3 provides both bivariate and partial correlations, which treat age a third variable, between the extent of cognitive resources and negative emotions. The results support the hypothesis that increased engagement of cognitive resources in strategy use decreases sadness, but only in terms of intensity and not dominance.

Table 3. Correlations for strategy level by frustration intensity and dominance for each task segment

	Child Strategy Rating Across Lock Box Segments		
Lock Box Segment	1	2	3
Anger (Spearman bivariate)			
Intensity	**.268**	**.352**	**.135**
p	.001	.001	.048
Dominance	**.240**	**.365**	**.158**
p	.001	.001	.026
Anger (Partial)			
Intensity	**.253**	**.191**	.071
p	.001	.009	.193
Dominance	.067	**.190**	.054
p	.205	.010	.254
Sadness (Spearman bivariate)			
Intensity	**-.275**	**-.411**	**-.316**
p	.001	.001	.001
Dominance	**-.248**	**-.377**	**-.331**
p	.001	.001	.001
Sadness (Partial)			
Intensity	**-.527**	**-.428**	**-.378**
p	.001	.001	.001
Dominance	-.007	-.114	**-.177**
p	.468	.082	.015

Note. One child is excluded from segment 3 due to extreme anger intensity. Correlations that were significant at $p < .05$ are bolded.

Discussion

This study is among the first to test the hypothesis that there are age-related differences in the association between young children's frustration and the extent to which their self-regulation strategies engage cognitive resources. We were guided by Kopp's (1982) framework, which states that in addition to socialization and learning (external resources), the emergence of self-regulation also depends on children's internal resources, i.e., cognitive advances that they can draw on to engage in autonomous self-regulation of their emotions and actions. This led us to predict that age would be associated with a decline in the intensity and dominance of frustration, with an increase in the engagement of cognitive resources, and with an inverse relation between frustration and engagement of cognitive resources. Some predictions were supported, some were not, and some were unexpected.

First, the prediction that frustration about not being able to unlock a box that contained a chosen toy would decline with age, during the period between 30 and 60 months, was partially supported. Specifically, children's sadness intensity increased as child age decreased, but only during the end of the task and the association was of small magnitude. Contrary to prediction, anger – both in terms of intensity and dominance – increased with child age. These results are also consistent with Tan and Smith's (2018) study using the same procedure. They postulated and found that problem solving skills were related to increased anger rather than increased sadness. That is to say that increased anger supports persistence, or maintains effort, to reach a goal. This is also consistent with the theoretical view that the function of anger is to increase effort to achieve a goal (Barrett & Campos, 1987), which has been shown in other studies of preschool age children (Dennis et al., 2009).

Their study also supports age related differences in relation to child sadness. Namely, decreased child sadness was found to be significantly correlated with increased child age.

Second, the prediction that engagement of cognitive resources increases with age was not supported. Contrary to our predictions, strategy level and age showed no support for the prediction that older children would engage in higher order strategy use with the Transparent Locked Box procedure. A consistent pattern also did not appear, as the direction of the relations changed across segments.

Third, as predicted, the more children were able to engage their cognitive resources in how they strategized to open the locked box, they were less sad. Both the intensity of sadness and its dominance in each segment decreased as children engaged cognitive resources, although the effects for sadness dominance diminished when age was entered as a control variable.

However, anger intensity and dominance increased as the engagement of cognitive resources increased, contrary to prediction. When age was added as a control variable, these associations were largely unchanged. Comparable relations between anger and age have been found in a few other studies (Ramsook et al., 2019; Tan & Smith, 2018; Dennis et al., 2009). For example, at age 4 but not age 3 low intensity anger expressions predict task persistence (Ramsook et al., 2019). The expected inverse relation between anger intensity and/or dominance and the sophistication of young children's strategy use may be specific to more intense, enduring angry episodes. The task used in the present study, the Transparent Locked Box, may only elicit lower intensity anger, which then appears as a determined effort to open the box. Low intensity anger may be identified as a brow furrow or lips pressed together while higher intensity anger could be a screaming outburst.

Limitations and Future Directions

Our study included two main limitations that restricted the generalizability of our results. First, the present study was a single short lab observation that solely relied on the Transparent Lock Box procedure. Children were told to try to open the box to achieve a goal, i.e., retrieve a toy they had selected to keep. This task differs from other studies of self-regulation in which children must wait for something they want. Whether the same relations would emerge for those tasks remains to be determined. Future studies could focus on analyzing several different tasks to investigate the generalizability of the functional value of lower intensity anger.

Secondly, our study investigated age differences using a between person cross-sectional design, comparing younger and older children. A more powerful test of a developmental hypothesis that lower intensity anger becomes functional, at least in certain types of tasks, over the course of early childhood requires a within person longitudinal design. To our knowledge there are few direct tests of the association between children's frustration and the degree to which their strategies engage cognitive resources in delay tasks with a parent present (Ravindran et al., 2021) and none using a task like the Lock Box task where a child is alone. Finally, the sample was not representative of all young children in the U.S. and extending the study to different samples and considering the relevance of the questions and methods for children from different backgrounds is needed for a full documentation of the development of self-regulation in early childhood.

As part of future studies, replication of standardized protocols should be implemented. For example, the present study did this by using three specified two-minute perturbations during the Transparent Lock Box Task. The re-presentation of the stimulus problem reminds children of the task demands, a method for circumventing the potential for the task demands to change in children's minds as time passes.

Conclusion

First and foremost, our findings highlight the importance of examining how age moderate's anger. Few studies have investigated how the beneficial aspects of negative emotions impact various aspects of child development including self-regulation. Mainly because societal expectations inhibit a perspective in which negative emotions can be seen as acceptable to an extent. The current study also demonstrates that strategy use, and negative emotions have relationships that impact the degree of self-regulation. Future studies should continue to explore the magnitude of these relationships as well as their implications on child development as a whole.

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