

THE PENNSYLVANIA STATE UNIVERSITY  
SCHREYER HONORS COLLEGE

DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES

THE INFLUENCE OF TEMPERAMENTAL SURGENCY ON ENGAGEMENT AND  
DISENGAGEMENT COPING IN PREADOLESCENT CHILDREN

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SPRING 2016

A thesis  
submitted in partial fulfillment  
of the requirements  
for a baccalaureate degree  
in Human Development and Family Studies  
with honors in Human Development and Family Studies

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## ABSTRACT

In the absence of effective coping, stress can be detrimental to child development (Compas, 1987a). Determining factors that influence coping tendencies is vital to understanding how we can best help children to overcome stressors. This study, which was part of a larger experimental project, examined the relationship between temperamental surgency and coping strategies in a sample of preadolescent boys and girls. The primary hypothesis was that high surgency scores would predict the use of more engagement coping and fewer disengagement coping strategies. A sample of 96 fourth and fifth grade children ( $M_{age} = 10.65$ ,  $SD = .67$ ) and one of their parents participated in the study. Both child and parent were asked to complete a set of questionnaires including the *Early Adolescent Temperament Questionnaire – Revised (EATQ-R)* and the *Response to Stress Questionnaire (RSQ)*. Bivariate correlations were conducted between one factor of the EATQ-R: surgency, and three factors of the RSQ: primary control coping, secondary control coping, and disengagement coping. A Fisher's r-to-z transformation was used to evaluate whether there was a significant difference in the temperament – coping relationship between boys and girls. The results revealed a possible relationship between high surgency characteristics (i.e. thrill seeking) and primary control coping strategies (i.e. problem solving) in a child, as identified by their parent. Also from the parent's perspective, children with high surgency scores were less likely to disengage in a stressful situation. There was not a significant difference in the way that surgency affects coping styles used by boys and girls. These findings highlighted key differences between the identification of primary vs. secondary control behaviors and parent vs. child report of coping. With its consideration of both coping and temperament, this study can inform future

interventions by identifying which children are more vulnerable to negative development outcomes as a result of their propensity to cope with stress ineffectively.

*Keywords:* coping, stress, temperament, surgency, gender, children

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## ACKNOWLEDGEMENTS

I would like to thank my thesis supervisor, Dr. Martha Wadsworth, for her constant patience, support, and guidance over the past year through the early stages to the completion this project. Thank you to both of the HDFS honors advisors that I have worked with over the past two years, Dr. Lisa Gatzke-Kopp and Dr. Charles Geier, who have helped keep me on track and ensured I had all of the resources needed to be successful. I would also like to thank all of the members of the C.A.R.E.S. Lab, especially lab manager Alaina Wodzinski and all of graduate students for always helping me find answers to various questions. To my fellow honors scholar, Anna Chen, thanks for always being my sounding board, commiserating with me, and celebrating all of the little victories along the way. Thanks to my brother, Dan, for believing in me and convincing me not to give up when I really wanted to. Finally, thanks to my Mom for always being my number one fan and for her unconditional love, support, and encouragement.

## **Chapter 1**

### **Introduction**

Stress is an inevitable part of childhood and growing up. It can be conceptualized as a major life event (i.e. serious illness, death of a loved one, relocation to a new city) or experienced regularly as inconvenient hassles of daily life (Wertlieb, Weigel, Springer, & Feldstein, 1987). Children will encounter a variety of stressors in their immediate environment. Some children are able to adapt well under stress and will even use stressful events as a learning experience (Compas, 1987b). However, when not managed effectively, or when experienced with high frequency or intensity, stress can accumulate and lead to adverse physical, emotional, and behavioral problems (Compas, 1987a). How are some children able to overcome stress while others fall prey to these negative developmental outcomes? A wealth of evidence suggests that coping skills play an important role. Children who recognize stressors in their environment and engage in active coping processes, such as problem solving, typically experience better outcomes than children who avoid or disengage from the stressor (Connor-Smith & Compas, 2004; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). This raises an important question. Do children have inherent tendencies to gravitate toward one coping style over another? The aim of this paper is to explore the underlying temperamental factors that may influence children's development of or ability to apply certain coping strategies. In addition, this study will explore the extent to which associations between temperament and coping may differ for boys and girls.

## **Effects of stress on well-being**

There is ample research associating stress with negative outcomes for children. In addition to harmful physiological manifestations of stress in the body, stress has been related to psychological problems including depression, anxiety, and suicide ideation (Compas, 1987a). Higher levels of stress have also been associated with more behavior problems such as delinquency and aggression (Wertlieb et al., 1987).

With such risk for adverse outcomes stemming from stress exposure, it would be helpful to understand if there are pathways leading from specific types of stress to specific types of outcomes (Cohen & Cicchetti, 1995). However, previous research on this topic has been largely unsuccessful in establishing significant stress-outcome patterns. In their study of specificity, McMahon and colleagues (2003) sought to link specific stressors (i.e. violence, abuse, marital conflict, illness, and poverty) to particular outcomes (i.e. depression, substance abuse, anxiety, and delinquency). Yet, their results revealed that different types of stressors were not necessarily related to specific outcomes. They found that these results were consistent with the ideas of equifinality (different stressors could achieve the same outcome) and multifinality (similar stressors could lead to divergent outcomes) (McMahon et al., 2003). Furthermore, not every person who experiences high levels of stress is at equal risk for negative effects; individual and environmental differences will alter the way that stress is interpreted and coped with from one person to another (Crean, 2004). Since it is difficult to establish these associations between stressor and outcome variables, it may be more effective to examine other important processes in the stress-outcome realm, such as coping strategies.

## **Coping**

Coping can be defined as one's attempt to adapt their cognitive, emotional, and behavior responses to a stressful environment (Zeitlin, 1985). There is significant variability in the resources and methods that children use to cope with stress (Compas, 1987b). For example, some strategies are oriented toward solving a problem, while others involve avoiding the problem. The application of certain strategies can lead to adaptive or maladaptive responses to stress (Thompson et al., 2010). However, the way a response is classified in this spectrum of adaptation depends on which model the researcher is using to conceptualize coping.

### **Models of coping**

Coping has been categorized in numerous ways, resulting in some degree of inconsistency across the studies in the existing research (Skinner, Edge, Altman, & Sherwood, 2003). Generally, though, models classify forms of coping as active (confronting the problem) or avoidant (avoiding the problem) (Connor-Smith et al., 2000). Two perspectives that are especially related to the study of coping in children are the *ways of coping* model (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984) and the *responses to stress* model (Connor-Smith et al., 2000). The ways of coping model identifies *problem-focused coping*, which relates to directly managing the problem, and *emotion-focused coping*, which involves regulating emotional distress in response to a stressor (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). The *responses to stress* model subdivides coping into engagement and disengagement coping. Engagement coping is further split into primary control and secondary control strategies. Primary control is an active form of coping that involves modifying the environment or one's own personal reactions to the environment.

Examples of primary control coping are problem solving, emotional expression, or emotion regulation. Secondary control coping is an accommodative form of coping that involves maximizing the fit between self and environment. Examples of secondary control include cognitive restructuring and positive thinking (Connor-Smith et al., 2000). These engagement strategies are generally believed to be adaptive because they enable the child to take an active role in managing themselves and their environment. Disengagement coping involves the use of avoidance, denial, or wishful thinking strategies. Though these strategies are often considered maladaptive, the usefulness depends on the child's environment. For example, it usually is unhealthy for a child to avoid problems, but in situations that are dangerous, it may be in the child's best interest to avoid the problem (Compas et al., 2001; Edlynn, Gaylord-Harden, Richards, & Miller, 2008).

Trends in previous research reveal that engagement coping is generally associated with positive developmental outcomes, in contrast with disengagement coping, which has been associated with more negative outcomes. Multiple studies have associated adaptive coping with better mental and physical health outcomes in addition to overall healthy adjustment (Connor-Smith & Compas, 2004; Compas et al., 2001; Fields & Prinz, 1997). Active coping has also demonstrated a negative association with psychological symptomology (Crean, 2004; Lengua & Stormshak, 2000). In children, disengagement coping is a risk for troubled psychological development (Compas et al., 2001; Seiffge-Krenke, 1995; Wolchik & Sandler, 1997) and has been associated with adverse psychological outcomes such as symptoms of anxiety or depression in adolescents (Jaser et al., 2005; Marcks & Woods, 2005).

## **Factors that influence coping**

Individual coping style is influenced by a variety of external and internal factors. Externally, the type of stressor (i.e. loss of a loved one, poverty, peer difficulty, or school failure) can affect the strategy a child may use to cope with it (Band & Weisz, 1988). For example, a child may cope with the death of a grandparent differently than how they would cope with failing a test. The former is a stressful situation that the child cannot change; he or she could adapt to this change in their environment by seeking social or spiritual support. Alternately, the latter is a stressful situation that can be modified by engaging in problem-focused behaviors such as studying harder for the next test. Internally, cognitive development can affect a child's ability to recognize which strategies will work in certain situations. Band & Weisz (1988) suggested that younger children who are less cognitively mature may be less likely to use secondary control approaches due to the fact that these strategies are more abstract and more difficult to observe in others. The way children interpret a stressor may also affect coping. If a child perceives the stressor as within their control, they can try to solve the problem. If the stressor is perceived to be out of their control, the child is more likely to avoid the problem (Clarke, 2006). Furthermore, coping may depend on how a stressful event is appraised. A child will try to protect him or herself from harm if the stressor is appraised as threat. If a child anticipates a negative outcome, they might adjust their coping to avoid unpleasant consequences. Conversely, if they anticipate a positive outcome, they can orient their coping strategy to obtain their goal (Lazarus & Folkman, 1984). An additional factor believed to influence the appraisal of stress, and therefore coping, is the child's temperament – which is the focus of this study.

## **Overview of temperament**

Temperament can best be described as a set of “relatively consistent, basic dispositions inherent in the person that underlie and modulate the expression of activity, reactivity, emotionality, and sociability” (Goldsmith et al., 1987). Temperamental differences between individuals are evident during early infancy and continue to evolve through childhood, adolescence, and into adulthood. Initially, it was believed that temperamental tendencies expressed during infancy had a strong genetic basis while the manifestations of these traits throughout development were more susceptible to environmental influence (Goldsmith et al., 1987). However, more recent research clarifies that biological and environmental factors work together over the course of the full lifespan to shape individual temperament (Shiner et al., 2012). This topic has been studied from the perspective of a wide variety of fields such as psychology, biology, sociology, and human development. The multidisciplinary nature of temperament has produced different theories of how personality develops across the lifespan and how specific traits affect the way in which individuals interact with other people and their environment.

## **Models of temperament**

Temperament pioneers Thomas and Chess (1977) classified temperament according to nine behaviors observed in infants: activity level, rhythmicity, approach or withdrawal, adaptability, threshold of responsiveness, intensity of reaction, quality of mood, distractibility, and attention. They identified three specific temperamental styles: easy, difficult, and slow-to-warm. Easy children have rhythmic schedules of eating and sleeping. They enjoy new situations and are not easily frustrated. They adapt well to change and have a generally positive mood. Conversely,

difficult children have irregular eating and sleeping schedules. They withdraw in new situations and tend to cry extensively when frustrated. They adapt to change slowly and often with reluctance. Children who are slow-to-warm do not fall on either end of the spectrum. Rather, they just need time to get used to new situations before feeling comfortable (Thomas & Chess, 1977). Thereafter they are indistinguishable from children with easy temperaments.

Complementary to Thomas and Chess' model, Mary Rothbart's framework offers a view of temperament that is more consistent with the field of psychology. Her work considers biological and environmental influences on temperament and integrates them with the development of personality, conscience, and psychopathology. Questionnaires developed by Rothbart and colleagues consistently identify three higher order factors: surgency, negative affectivity, and effortful control (Capaldi & Rothbart, 1992). Each factor contains a subset of identifying characteristics. Surgency includes activity level, sociability, high-intensity pleasure, and low-intensity pleasure. Negative affectivity includes anger, sadness, fear, and physical discomfort. Effortful control includes low-intensity satisfaction, inhibitory control, and the ability to focus attention (Shiner et al., 2012). Unlike Thomas and Chess' temperamental styles, an individual is not identified by one single higher order factor. Rather, each of the subset characteristics is considered either high or low. The factors label the grouping of characteristics, not the whole individual.

### **Temperament and coping**

Child's temperament relates to coping by defining the threshold of reactivity to stress and therefore determining the range of coping strategies that can be used (Compas, 1987b; Hauser &

Bowlds, 1990). Certain dimensions of temperament have been linked to specific coping behaviors. Negative affectivity has been associated with disengagement coping (Watson & Hubbard, 1996). It is related to greater appraisal of the stressor as a threat and greater use of avoidance coping (Lengua & Long, 2002). Children high in effortful control have demonstrated the ability to cope with stress more adaptively by using active, problem-focused strategies (Salmon & Pereira, 2002; Watson & Hubbard, 1996). Activity level can directly or indirectly influence adaptive coping behavior in children. Directly, managing stress effectively takes energy and attention. Indirectly, the application of problem solving skills requires mental drive (Carson & Bittner, 1994).

Compas, Connor-Smith, and Jaser (2004) have suggested that temperament serves as a general risk for psychopathology since individual traits can be implicated in more than one disorder. Temperament characteristics such as negative affectivity and effortful control have been linked to psychological outcomes (Muris & Ollendick, 2005; Nigg, 2006; Oldenhinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007). For example, Negative affectivity has been associated with higher levels of internalizing/externalizing problems such as depressive and aggressive behavior (De Boo & Spiering, 2009; Lengua & Long, 2002). Since adaptive and maladaptive coping have been associated with a similar range of psychological outcomes, it is possible that temperament style may account for some of the variability in this relationship.

It is also important to consider the role of gender when examining the relationship between temperament and coping, though previous research has yielded inconsistent results. Some studies have found that girls, for the most part, are more likely to employ maladaptive coping strategies. Conversely, other studies have found that females are more likely to use approach coping styles (Herman-Stahl, Stemmler, & Petersen, 1995; Seiffge-Krenke, 1993). It is possible that the variation in these findings may be due to age. Younger girls were more likely than boys to utilize

emotion-focused coping. It was only once age increased into adolescence that girls demonstrated more rumination, resignation, and aggression (Hampel & Peterman, 2005). Furthermore, some studies have found girls were more likely to use social support as a problem-focused strategy, while others have not observed this result (De Boo & Spiering, 2010; Hampel & Peterman, 2005). Regarding patterns in males, Olah (1995) found less use of avoidance coping and more utilization of approach coping. There appears to be no previous research looking at gender differences in temperament as they relate to coping.

### **Surgency and extraversion**

Also notably absent from the bulk of literature surrounding temperament and coping are the effects associated with surgency. Surgency closely parallels the extraversion factor in many adult models of personality (Rothbart, Ahadi, & Evans, 2000). They share common underlying characteristics of impulsivity, high intensity pleasure, activity level, and lack of shyness (Putnam, Ellis, & Rothbart, 2001). In the adult literature, there is evidence that personality traits can act as short and long term predictors of coping style (Vollrath, Torgerson, & Alnaes, 1995). Additionally, temperament and personality are known to influence the appraisal of stressful situations. Extraverts are more likely to appraise stress as a challenge. Their sensitivity to reward motivates extraverts to adapt their behavior in anticipation of a positive outcome (Gallagher, 1990). Furthermore, extraversion has been positively associated with the use of active, problem-focused coping (Parkes, 1986).

Although there are no significant findings on gender differences related to temperament and coping in existing literature, Gomez and colleagues (1999) have reported on gender

differences in extraversion and coping. Extraversion was predictive of an avoidant coping style in males and an approach coping style in females (Gomez et al., 1999).

There is clear evidence that the trait of surgency in children is closely related to extraversion in adults. Extraversion has been associated with certain patterns of coping. These findings suggest that there is a gap in the current children's coping literature regarding the role of surgency in coping with stress. The primary research question of this study is whether surgency is related to engagement (primary and secondary control) and disengagement coping in a sample of preadolescent children. Due to the inconsistency of previous findings on gender differences, a secondary question includes examining whether these patterns of association between surgency and coping style differ for boys vs. girls. The subsequent data analyses will strive to answer three hypotheses. The first hypothesis speculates that surgency will have a positive association with engagement coping, specifically primary control coping. A secondary hypothesis states that surgency will have a negative association with disengagement coping. The third aim will explore the consistency of findings across gender and between parent and child report of the measures.

## Chapter 2

### Methods

#### Sample

The sample of 96 participants was obtained from a larger data set from an ongoing study called the Pre-Adolescent Stress and Coping (PASC) project. Fourth and fifth grade children ( $M_{\text{age}} = 10.65$  years,  $SD = .67$ ) and one parent were recruited from elementary schools in a small metropolitan area in the northeastern US. Child gender was evenly distributed (51% male) while the parent respondent was typically the mother (88.5% female). The sample had a median household income of \$71,000 ( $SD = 35,627$ ,  $n = 81$ ) with 15 (15.6%) parents unable or unwilling to report their annual family income. The majority of participants identified as White (97.8%,  $n = 92$ ).

#### Procedure

Recruitment letters were given to children at school to bring home. Caregivers were directed to the study website where they were able to enroll their children and complete the initial parent portion of the study. Tasks included consenting to participation, completing online questionnaires, and submitting a request to the research team to schedule the in-person child portion of the study. Children were the scheduled for 1.5-hour sessions that took place in the afternoon at the child's elementary school. Upon arrival, each child was assigned an experimenter

who obtained written consent from the parent (and assent from the child) to participate in the study. Periodically throughout the session, the child provided saliva samples. However, this biological data was not included as a part of the present study. The child was asked to answer a series of questionnaires, which were read aloud to them by the experimenter. Then, the child participated in a modified version of the Trier Social Stress Test (TSST-C; Buske-Kirschbaum et al., 1997), during which they were asked to present a five-minute speech about themselves and recite math problems out loud. After completing the TSST, the child was brought to another room where they were told to wait for their results. The room was either part of the control condition (the child sat at an empty table) or treatment condition (the child was given musical instruments and art supplies to play with). Their behavior in the room was videotaped and coded for behaviors and emotional affect. This observational data was also not included as part of the present study. After approximately ten minutes in the room, the experimenter revealed the true purpose of the study to the child and the child participated in a meditation activity to relax.

## **Measures**

### *Early Adolescent Temperament Questionnaire – Revised (EATQ-R)*

The Early Adolescent Temperament Questionnaire – Revised (EATQ-R; Capaldi & Rothbart, 1992; Ellis & Rothbart, 2005) is 62-item, parent-report questionnaire based on Rothbart's model of early adolescent (ages 9-12) temperament. The measure identifies four broad factors that encompass nine temperamental dimensions: Effortful Control (attention, activation control, and inhibitory control); Surgency (low shyness, low fear, and high intensity pleasure); Negative Affectivity (irritability and frustration); and Affiliativeness (affiliation, pleasure

sensitivity, and perceptual sensitivity). Parents were asked to rate statements pertaining to their son or daughter on a 5-point Likert scale in which 1=Almost always untrue and 5=Almost always true. The present study focuses specifically on the surgency factor. An example statement that measure shyness is “Can generally think of something to say, even with strangers.” A high score on this item indicates low levels of shyness. An example statement that measures fearfulness is “Feels scared when entering a darkened room at night.” A high score on this item indicates high levels of fearfulness. An example statement for high intensity pleasure is “Would like driving a racing car.” A high score on this item would indicate that the child enjoys exhilaration. Within this sample, the surgency factor of the EATQ-R demonstrated acceptable internal reliability ( $\alpha = .75$ ).

#### *Response to Stress Questionnaire (RSQ)*

The Response to Stress Questionnaire (RSQ; Connor-Smith et al., 2000) is a 57-item questionnaire, with separate versions for parent and child reports, which measures coping and involuntary stress responses in adolescents. The measure identifies five coping factors that each encompasses unique behaviors: Primary Control (problem solving, emotion regulation, and emotion expression); Secondary Control (acceptance, distraction, cognitive restructuring, and positive thinking); Disengagement coping (denial, avoidance, and wishful thinking); Involuntary engagement (rumination, intrusive thoughts, emotional/physiological arousal, and impulsive action); Involuntary Disengagement (emotional numbing, inaction, escape, and cognitive interference). Involuntary engagement and involuntary disengagement were not included in the present study.

On the parent version, parents rated on a scale of 1 (not at all) to 4 (a lot) how much their child does or feels certain things when they have problems with their family. An example response

associated with primary control coping is “She does something to try to fix the problem or take action to change things.” A response associated with secondary control coping is “She realizes she just has to live with the ways things are.” An example of disengagement coping would be “Her mind goes blank when she has a problem with her family, she can’t think at all.” Within this sample, primary control coping ( $\alpha = .78$ ), secondary control coping ( $\alpha = .82$ ), and disengagement coping ( $\alpha = .74$ ) demonstrated satisfactory internal reliability.

The child version has the same rating system, but with stressful situations related to peers. An example associated with primary control coping is “I think of different ways to change the problem or fix the situation.” A response associated with secondary control coping is “I decide I’m okay the way I am, even though I’m not perfect.” An example of disengagement coping is “When problems with the other kids come up, I try not to feel anything.” Within this sample, primary control coping ( $\alpha = .73$ ), secondary control coping ( $\alpha = .76$ ), and disengagement coping ( $\alpha = .70$ ) also demonstrated acceptable internal consistencies.

### **Analytic plan**

**Missing data.** Missing data values for all key demographics and study variables were recorded. The total percentage of missing data was 6.8 percent.

**Correlations.** Bivariate Pearson’s correlations were used to examine associations between surgency and three coping variables: primary control, secondary control, and disengagement coping (parent and child report). Since a goal of this study was to explore whether these

associations are consistent between boys and girls, child's gender was also included in the model using Spearman's rho.

**Fisher's r-to-z transformation.** To examine whether the correlations varied by gender, the sample was split into male and female groups. The *r-values* for each group were adjusted for skewed distribution and standard error. The adjusted  $r^l$  values were entered into Fisher's equation, which generated a new "z" coefficient. An observed *z-value* greater than  $z_{0.025} = \pm 1.96$  would indicate that the differences between boys and girls are significant (Fisher, 1921).

## Chapter 3

### Results

The first hypothesis speculated that surgency would have a positive association with engagement coping, specifically primary control coping. Bivariate correlations revealed a positive trend between surgency and parent report of primary control coping ( $r = .214, p = 0.053$ ). There were no significant relationships found between surgency and child report of primary control coping ( $r = -.069$ ), child report of secondary control coping ( $r = .105$ ), and parent report of secondary control ( $r = .063$ ).

The second hypothesis proposed that surgency would have a negative association with disengagement coping. The analyses revealed a significant negative correlation between surgency and parent report of disengagement coping ( $r = -.276, p < 0.05$ ), but the relationship between surgency and child report of disengagement was non-significant.

The third aim of this study was to explore the consistency of these findings across gender. A significant positive correlation between surgency and parent report of primary control in males emerged after splitting the sample by gender ( $r = .417, p < 0.01$ ). Additionally, when analyzing males and females separately, the significant negative correlation between surgency and parent report of disengagement coping disappeared completely in males ( $r = -.251$ ), while there was a trending relationship between the two variables in females ( $r = -.274, p = .079$ ).

After analyzing the correlation coefficients using the Fisher's  $r$ -to- $z$  transformation (Fisher, 1921), there was not a statistically significant difference in any of the surgency  $\times$  coping relationships between males and females. However, a trending association revealing that the

relationship between parent report of primary control and surgency was approaching a significance difference for boys vs. girls ( $z = 1.552, p = .08$ ).

## **Chapter 4**

### **Discussion**

The current study was motivated by an abundance of previous research on two other temperament factors (effort control and negative affectivity) regarding their relationship with coping styles in children, as well as the adult research on coping and extraversion, a personality factor which closely relates to surgency (Rothbart, Ahadi, & Evans, 2000). A gap in the current children's literature concerning the role of temperamental surgency in coping with stress is strikingly evident. A child's temperament can influence the way they cope with stress through various pathways (appraisal, activity level, etc.) (Compas, 1987b). It has been established that effective stress management is crucial to healthy development in all aspects of life (Conner-Smith et al., 2000). In order to gain a complete understanding of the role of temperament in applying vital coping skills, it's important to consider all three domains of Rothbart's model and the behavioral characteristics that they represent. While effortful control (low intensity satisfaction, high inhibitory control, and high attention) and negative affectivity (high anger, sadness, and fear) are divided on opposite ends of a emotional-behavioral spectrum, surgency (activity level, sociability, high-intensity pleasure, and low-intensity pleasure) tends to fall in between by capturing a set of characteristics that could reasonably overlap with either side; it never really meets either extreme. Meanwhile, coping is also a process that is influenced by the interaction of these characteristics, making it highly unique to the individual child. It is this diverse quality of both surgency and coping that has likely made them difficult, yet undeniably interesting to study.

The aim of this study was to broaden the existing literature by investigating whether temperamental surgency was related to engagement and disengagement coping in a sample of preadolescent children. The first hypothesis speculated that surgency would have a positive association with engagement coping. The results revealed a positive trend between surgency and parent report of primary control coping. Although this finding was not found to be statistically significant, it suggests a possible relationship between high surgency characteristics (i.e. thrill seeking) and primary control coping strategies (i.e. problem solving) in a child, as identified by their parent. This supports the research linking extraversion to problem-focused coping (Parkes, 1986). The relationships between surgency and the remaining of elements of engagement coping – parent and child report of secondary control, as well as child report of primary control – were nonsignificant. This finding highlights key differences between primary vs. secondary control and parent vs. children report. Primary control coping strategies such as problem solving and expressing emotion are overt; they can be seen in action by another person. Conversely, secondary control strategies such as positive thinking are less obvious, and may not be easily identified by a parent. Leading to the next point, parents may be more cognizant of the coping strategy that their child is using. A child is not as cognitively mature as their parent (Band & Weisz, 1988), thus the parent may better recognize and identify their child's reactions to a situation. In the context of these results, parents were likely better able to identify primary control strategies over secondary control strategies because they are more obvious or overt in nature. It is possible that the preadolescent children reported their coping behaviors differently because they have not yet reached a full sense of self-awareness.

The second hypothesis posited that there would be a negative relationship between surgency scores and disengagement coping. There was, in fact, a significant negative correlation

between surgency and parent report of disengagement coping, but the relationship was nonsignificant for the child report. The inverse relationship suggests that surgency is protective against ineffective coping behaviors, such as learned helplessness, in the face of stress. It's plausible that children who are more sociable and reward-oriented would be more likely to problem-solve and express their emotions, as opposed to internalizing the stress. This finding also speaks to differences in the child's self-awareness and the parent's observation of their child's behaviors. Interestingly, some indicators of disengagement, such as wishful thinking, might be difficult to identify, while others, such as avoiding a problem, may be more obvious. More attentive parents would likely pick up on more indicators.

The third aim was to explore the consistency of these findings across gender. After analyzing the correlations with the full sample, the data was split by male and female groups. Initially, the relationship with disengagement coping, which was originally a significant negative correlation, weakened for both males and females. Also, a strong significant correlation between surgency and parent report of primary control emerged in males. However, after adjusting the correlation coefficients using the Fisher's transformation, none of the relationships had a significant difference for boys vs. girls. The relationship between surgency and parent report of primary control in males did remain at a trend level. The revelation that a majority of the findings did not vary significantly across gender could be due to the age of the sample. Hampel and Peterman (2005) noted in their study that coping behaviors in females began to change as they entered adolescence. It is possible that the preadolescent boys and girls in this sample have not yet begun to exhibit differentiated coping behaviors.

## **Strengths and Limitations**

The results brought attention to some effects associated with the use of questionnaire data in this study. The use of both parent and child reports of the Response to Stress Questionnaire, which allowed for a multidimensional view of the child's coping behaviors, was a clear strength of the study. Conversely, since the items inquired about interpersonal struggles, the child, and possibly even the parent, may have been reluctant to truthfully answer sensitive questions or admit to handling problems a certain way. Furthermore, the homogeneous sample, which consisted of mostly Caucasian, middle-income families, may limit the generalizability of the findings. The results may differ for lower income families who face the burden of chronic stress.

## **Implications and Future Directions**

These findings help to better understand the relationship between temperament and coping. One of the primary reasons for initiating this study was the evident lack of research surrounding the role of surgency as a stand-alone factor of temperament. However, it is possible that others have failed to find significant effects, as well. Perhaps this is an indication that future research should examine how factors of temperament interact with each other, as opposed to compartmentalizing each characteristic. Maybe there are certain profiles, combining multiple aspects of temperament, that are associated with more or less risk (i.e. high negative affectivity and low surgency). The idea of looking at the groupings of more than one factor can be applied to coping as well. This concept could open the door to a new level of coping and temperament research that looks deeper than one by one relationships to consider a more multifaceted perspective.

The findings of this study also point to an apparent discrepancy between parent and child reports of coping behaviors. A question that arises is how much of the relationship between surgency and coping style in children is impacted by parent's perception and interpretation of behavior. Furthermore, a parent's mental representation of a child may actually influence their behaviors if the child feels the need to conform to the expectations that their parents have conveyed. These conditions make it difficult for the findings of this study to offer any new insights on the inconsistent topic of gender differences in coping. How can we be sure if the findings suggest a difference in the way boys and girls cope with stress, or if there is a difference in the way parents interpret boys and girls coping behavior? One possible solution to this problem is to incorporate an observational component to study in addition to questionnaire data. The larger PASC project, from which this study is derived, is already in the process of doing this – observing the child's coping behaviors immediately after a stressful scenario. This will allow the interpretation of coping to be evaluated by an unbiased researcher. Another possible solution could be to have both parents, or additional adult caregiver complete the questionnaire in order to collect responses from a second perspective. Additionally, conducting a follow-up study of the same participants after puberty may help clarify if age impacts the significance of gender differences in the temperament X coping relationship.

Future research on this topic should consider the role parent-child attachment and/or parenting style. Less observant parents may not pick up on their child's unique coping behaviors, while more involved parents will likely have a better understanding of how their child reacts to stress and may even coach them in using appropriate coping strategies. Additionally, it is known that attachment style and temperament have a bidirectional relationship such that the child's temperament can elicit certain reactions from the parents while the parents' interactions can also

influence the child's behavior (Lengua & Kovacs, 2005). Previous research has shown that a secure parent- child attachment has the ability to diminish physiological reactions to stress (Hostinar, Johnson, & Gunnar, 2015). Knowing this information, it might be interesting to consider parent attachment as a moderating factor in the relationship between child temperament and the coping strategies they tend to use.

## **Conclusion**

Acknowledging that stress can be harmful to child development, this study explored factors that influence the application of certain coping strategies in preadolescent children by considering the role of temperament. Surgency, in particular, was related to both engagement and disengagement coping in various ways. Most notably, high surgency scores were positively correlated with parent report of primary control coping at a trend level and negatively correlated with parent report of disengagement coping at a significant level. This suggests that the generally positive traits attributed to extroverts (outgoing and friendly) may also extend to a more active and effective style of coping with stress. In addition to these results, this study highlighted some interesting differences between parent and child report of coping behaviors that were not initially hypothesized. Such findings could prompt new directions in research surrounding the way temperamental profiles of individual children are studied, the role of parents, and the role of age in the relationship between temperament and coping. Additionally, these results can inform future interventions by identifying which children are more vulnerable to negative development outcomes due to their propensity to cope with stress ineffectively.

Table 1. Descriptives and correlations for child coping, child gender, and surgency

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Primary control coping CR	—							
(2) Secondary control coping CR	.379**	—						
(3) Disengagement coping CR	-.428**	-.492**	—					
(4) Primary control coping PR	.305**	-.044	-.166	—				
(5) Secondary control coping PR	.251*	.138	-.172	.483**	—			
(6) Disengagement coping PR	-.164	-.001	-.006	-.474 **	-.269 *	—		
(7) Surgency	-.069	.105	-.056	.214 <sup>†</sup>	.063	-.276*	—	
(8) Child gender	.203*	-.097	-.159	.098	-.035	.155	-.116	—
<i>M</i>	.19	.26	.14	.20	.22	.14	3.2	.49
<i>SD</i>	.03	.04	.02	.03	.04	.02	.43	.50
<i>Range</i>	.13-.34	.14-.37	.10-.23	.14-.28	.11-.32	.09-.21	2.1-3.2	0.0-1.0

Note. *N* = 96; CR = Child report; PR = Parent report

\**p* < .05.

\*\**p* < .01.

<sup>†</sup> = Trend

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## RESEARCH EXPERIENCE

Research Assistant, C.A.R.E.S. Lab (Director: Martha Wadsworth, Ph.D.) *Fall 2014 to present*

- Completed a wide range of office tasks such as data entry, behavioral data coding, and participant file organization
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## LEADERSHIP EXPERIENCE

Director, Camp Kesem Central PA

*August 2015 to present*

- Lead an Executive Board of 13 Coordinators as they execute their assigned responsibilities in preparation for the week of camp
- Communicate questions and concerns to Camp Kesem National Program Director during weekly conference calls
- Uphold relationships with local community leaders who participate in the chapter's Advisory Board
- Present information about Camp Kesem to community health care institutions and support groups in effort advertise our camp and offer the program to new campers
- Manage the Administrative Team during the week of camp in serving as a resource to counselors, handling crises, facilitating camp activities, and ensuring that camp runs smoothly

Volunteer Coordinator, Camp Kesem Central PA

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- Recruited, interviewed and trained 35 student volunteer counselors to be exceptional role models to a group of 50 campers
- Facilitated weekly training sessions and team building activities with the group of counselors to prepare them for camp and to empower them to be successful leaders

Security Leader, Penn State IFC/Panhellenic Dance Marathon *September 2014 to February 2015*

- Educated 40 volunteers on event security information on a weekly basis leading up to the event
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