

UC Irvine

UC Irvine Electronic Theses and Dissertations

Title

Emotional and Behavioral Problems in Development: The Role of Implicit Theories of Emotion

Permalink

<https://escholarship.org/uc/item/4880k5xb>

Author

Flynn, Elinor Bryant

Publication Date

2016

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA, IRVINE

Emotional and Behavioral Problems in Development:
The Role of Implicit Theories of Emotion

THESIS

Submitted in partial satisfaction of the requirements
for the degree of

MASTER OF ARTS
In Social Ecology

by

Elinor Bryant Flynn

Thesis Committee:
Professor Linda J. Levine, Chair
Professor Jodi A. Quas
Professor Elizabeth Cauffman

2016

TABLE OF CONTENTS

	Page
LIST OF TABLES	iii
ACKNOWLEDGMENTS	iv
ABSTRACT OF THE THESIS	v
INTRODUCTION	1
METHODS	11
RESULTS	17
DISCUSSION	21
REFERENCES	27

LIST OF TABLES

1. Table 1: Means and Correlations of Primary Variables	17
2. Table 2: Relation Between Implicit Theories and Internalizing Symptoms	19
3. Table 3: Relation Between Implicit Theories and Aggressive Behaviors	20

ACKNOWLEDGMENTS

I am very grateful for the guidance and encouragement that I received from my advisor Linda Levine and Jodi Quas throughout this project. They gave me both the freedom to pursue this idea as well as careful feedback on my writing and presentation of ideas that significantly enhanced the quality of this project. In addition, I want to thank Elizabeth Cauffman for serving as an additional committee member and her comments and suggestions. I am also grateful to my cohort friends for their support.

This research was made possible in part by generous funding by the U.S. Department of Health and Human Services Fellowship for Doctoral Candidates and Faculty for Research in Child Maltreatment.

ABSTRACT OF THE THESIS

Emotional and Behavioral Problems in Development:

The Role of Implicit Theories of Emotion

By

Elinor Bryant Flynn

Masters of Arts in Social Ecology

University of California, Irvine, 2016

Professor Linda Levine, Chair

Adolescence is a time of psychological transition and vulnerability. Youth who have been exposed to adverse family environments, particularly those having experienced maltreatment, are especially at risk for emotional and behavior problems. One important factor that may predict adolescents' emotional well-being and behavior is their implicit beliefs about whether or not emotion can be controlled. The current study examines the links between implicit theories of emotion and internalizing symptoms and aggression in a sample of high-risk youth ages 10 to 17. 112 of the participants were maltreated and the remaining 69 formed a control group. Adolescents who expressed greater perceived control over their emotion reported lower levels of internalizing and aggressive behaviors. Although mean levels of implicit theories did not differ between maltreated and control groups, there was a trend towards maltreated youth being less likely to view their emotions as controllable compared to non-maltreated youth. These findings indicate that adolescents' mindsets regarding the controllability of their emotions may have important implications for their mental health.

INTRODUCTION

Adolescence is a developmental period marked by significant biological, psychological, and social changes. Therefore, it is not surprising that this period is also associated with an increase in challenges and negative life events, which in turn are associated with an increase in negative emotion and distress (Larson & Ham, 1993). Indeed, it is estimated that within the United States, 32 percent of youth will develop an anxiety disorder, almost 20 percent will develop a behavior disorder, and over 14 percent will develop a mood disorder by the time they are 18 years of age (Merikangas et al, 2010).

Many of the internalizing and externalizing symptoms that contribute to the development of these mental health problems during adolescence are rooted in problems with self-regulation. Adolescents high in self-regulation tend to experience fewer negative life events and are less likely to associate with deviant peers due to their superior planning skills and ability avoid problematic situations. In contrast, those with low self-regulation have poorer impulse control and difficulty resisting provocation (Wills, Sandy, & Shinar, 1999). In addition, adolescents who experience more intense and volatile negative emotions and are less effective at regulating these negative emotions tend to have greater depressive symptoms and engage in more anti-social behaviors (Silk, Steinberg, & Morris, 2003).

Adolescents are unlikely to be motivated to regulate their emotion or behavior if they don't first believe that they can. However, far less is known about adolescents' perceptions of their own control over their emotions and the downstream consequences of those beliefs. Decades of research by Carol Dweck and colleagues have shown that

both children and adults hold implicit theories about the controllability of human attributes and capacities, including intelligence, personality, and, more recently, emotion (see Dweck, 1986; 1996 for reviews). Implicit theories of emotion have been found to be predictive of depressive symptoms and emotion regulation skill (Tamir et al, 2007; DeCastella et al, 2013; Schroder et al, 2015). However, to date, only one study has examined adolescents' implicit theories of emotion.

Since adolescence is considered a psychologically vulnerable period, it is important to understand how perceptions of control over emotion may impact well-being and behavior in this age group. As a result, the current study was designed to understand the links between implicit theories of emotion and emotional and behavioral problems in a sample of high-risk adolescents who may be especially vulnerable to psychopathology and anti-social behavior. In addition, no prior work has considered how adverse family contexts may impact the development of beliefs about the controllability of emotion. Therefore, a second goal of this project was to understand whether or not adolescents' who have experienced maltreatment are more likely to view their emotions as harder to control.

Internalizing and Externalizing Problems in Adolescence

Internalizing problems during childhood and adolescence are a strong predictor of a diagnosis of psychopathology in adulthood, making adolescence a critical period for mental health prevention and intervention (Patalay, Deighton, Fonagy & Wolpert, 2015). Longitudinal research shows that internalizing symptoms become more prevalent around the onset of puberty and steadily increase through adolescence (Patalay, Deighton, Fonagy & Wolpert, 2015; Lahey, Flagg, Bird et al, 1996; Roza, Hofstra, van der Ende &

Verhulst, 2003; Van Oort, Greaves-Lord, Verhulst, Ormel, Huizink, 2009). These symptoms peak between ages 13 to 15 and then gradually decrease during late adolescence (Patalay et al, 2015). Although anxiety and depression are both internalizing disorders, they have different developmental trajectories. Specifically, anxiety disorders are more likely to emerge during childhood whereas incidence rates of mood disorders remain low until mid-to-late adolescence when they sharply increase (Roza et al, 2003).

Internalizing problems impact several domains of functioning including peer relationships and academic achievement. There appear to be bidirectional relationships between internalizing problems and both poor peer relationships and academic performance. Cross-sectional and longitudinal studies show that children and adolescents with greater emotional problems are at greater risk for being victimized by peers (Finnegan, Hodges & Perry, 1998; Hodges & Perry, 1999; Lester, Dooley, Cross & Shaw, 2012). For instance, using a national sample of children ages 2 to 17, Turner, Finkelhor & Ormrod (2010) found that youth with higher levels of emotional and behavioral problems were at higher risk of peer victimization, maltreatment, and sexual victimization a year later.

Internalizing problems during adolescence often co-occur with externalizing behaviors (Carballo, Serrano-Drozdowskyj, Nieto, Neira-Hernando, Perez-Fominaya, Molina-Pizarro, De Leon-Martinez, Baca-Garcia, 2014; Silove et al, 2015; McLaughlin, Aldao, Wisco, & Hilt, 2014). Although most adolescents do not engage in high levels of externalizing behavior, rates of conduct problems, aggression, and anti-social behaviors do increase considerably during this period. Moffitt and colleagues have distinguished between trajectories of anti-social behavior that emerge early in childhood and those that

emerge during adolescence (Moffitt, 2003; Moffitt, 1993; Sentse, Kretschmer, Haan & Prinzie, 2016). Externalizing problems that develop during adolescence are believed to be a way for youth to test authority figures and gain a sense of autonomy (Moffitt, 1993). Although researchers once believed that such behavior problems would be limited to the transitory period of adolescence, more recent work suggests that destructive behaviors that develop during adolescence are rarely limited to just this period and often predict longer term trajectories of anti-social behavior into adulthood (Fairchild et al, 2013).

Adverse Family Environments

In addition to the developmental transitions that put adolescents more at risk, adverse family contexts also increase the risk for mental health problems. Youth who come from harsh and unstable family environments, particularly those involving maltreatment, tend to have problems regulating their emotion and behavior (Kim & Cicchetti, 2010; Grasso, Dierkhising, Branson, Ford, & Lee, 2015; Manly, Kim, Rogosch & Cicchetti, 2001). For several reasons, family dynamics play a critical role in the development of children's emotion regulation skills. These include but are not limited to: parents model for children how emotion should or should not be expressed; parents provide emotion coaching and teach emotion regulation strategies; and the overall emotional climate of the household either promotes a sense of security and predictability regarding emotional expression or one of fear and unpredictability (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Maltreated youth, in particular, are less likely to have caregivers that provide the type of support and scaffolding that foster healthy emotion regulation and are more likely to be growing up in emotionally volatile and toxic family climates (Shipman, Schneider,

Fitzgerald, Sims, Swisher, & Edwards, 2007; Shipman et al, 2000). As a result, compared to typical youth, maltreated youth have been found to show differences in emotional expression (Gaensbauer, 1982), recognition (Pollak, Cicchetti, Hornung & Reed, 2000), understanding (Shipman, Zeman, Penza & Champion, 2000), and communication (Beeghly & Cicchetti, 1994). Each of these components of emotion is integral to the healthy development of emotion regulation skills.

Self-Regulation

Self-regulation has been broadly defined as internal or behavioral processes which allow an individual to adjust his or her thoughts, affect, attention, or behavior in such a way to effectively pursue their goals and adapt to changing circumstances (Karoly, 1993). Thus self-regulation skills operate both in behavioral and emotional domains. Problems with self-regulation in adolescence are associated with increases in negative life events, increased anti-social behavior, and deviant peer affiliations (Wills, Sandy, & Shinar, 1999; Cauffman et al, 2005). Krueger, Caspi, Moffitt, White, & Stouthamer-Loeber (1996) found that youth who consistently sought immediate gratification on a laboratory task were significantly more likely to be rated as higher in aggressive and delinquent behavior than those with internalizing problems or no problems, as rated by their teachers and parents. Franken et al (2015) found that low self- control predicted increasing externalizing problems in adolescents independently of the influence of externalizing behaviors within friend groups.

A particular aspect of general self-regulation that is believed to underlie emotion regulation is effortful control (Eisenberg & Sulik, 2012). Effortful control is a key element of executive functioning and refers to the ability to direct attention efficiently,

inhibit a dominant response and or initiate a subordinate response (Eisenberg, 2012).

This process allows individuals to do such tasks as remain focused on an assignment in the face of distraction or to resist the urge to interrupt and remain quiet when listening to a speaker. For instance, Thompson, Zalewski, & Lengua (2014) found that pre-adolescents high in effortful control were less likely to appraise challenges as highly threatening, which in turn was associated with lower internalizing problems over time.

Effortful control has been found to relate to both externalizing and internalizing symptoms. Eisenberg, Zhou, Spinrad, Valiente, Fabes, & Liew (2005) found that early adolescents' effortful control predicted their levels of externalizing symptoms two years later. Low effortful control ability has also been found to predict higher internalizing symptoms and externalizing symptoms over and above the effect of negative emotionality and been found to protect against the negative effects of fear on internalizing problems and frustration on externalizing problems (Oldehinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007). Other work has found that effortful control mediates the relationship between prosocial peers and internalizing symptoms and anti-social peers and externalizing symptoms amongst adolescents (Dyson, Robertson & Wong, 2015). The direct link between effortful control and emotion regulation is critical given that children and adolescents who fail to develop effective emotion regulation skill are at increased risk for psychopathology (McLaughlin et al, 2011; Silk, Steinberg, & Morris, 2003). Specifically, individuals who tend to use less effective cognitive emotion regulation strategies including rumination and catastrophizing, as opposed to positive reappraisal or positive refocusing, tend to have higher symptoms of depression and

anxiety (Garnefski & Kraaij, 2006; Garnefski, Kraaij & van Etten, 2005; Aldao, Nolen-Hoeksema, & Schweizer, 2010).

Moreover, although emotion regulation problems have been tied primarily to internalizing problems, there is some evidence that they underlie externalizing problems as well. Poorly regulated negative emotions such as anger, frustration, and fear may lead children and adolescents to react with aggression or other forms of externalizing behaviors. For instance, McLaughlin et al (2014) found that a tendency to ruminate was positively associated with depression and anxiety, but also aggressive behavior.

Perceived Control over Emotion

Despite the well-documented link between emotional and behavioral regulation and mental health, little is known about adolescents' *perceptions* of their ability to control their emotion and how those may influence their mental health. Decades of research have demonstrated that self-efficacy beliefs are integral to self-regulation because these beliefs directly and indirectly influence behavior through motivation, attention, and emotion (Bandura, Caprara, Barbaranelli, Gerbino & Pastorelli, 2003; Bandura, 1991). Beliefs about the self and one's capabilities affect how one responds to challenges and adversity, how vulnerable one is to stress, and decision-making. People who believe they can manage potential stressors generate fewer anxious cognitions, and therefore are better able to maintain psychological homeostasis. In contrast, those who do not believe they can manage such stressors experience high levels of autonomic arousal and become more distressed (Bandura, 1989).

A small body of work in this vast literature has examined self-efficacy beliefs about the controllability of emotion specifically. For instance, in a community sample of

Italian adolescents, Bandura, Caprara, Barbaranelli, Gerbino & Pastorelli (2003) found that perceived self-efficacy to regulate negative affect was negatively associated with depression and perceived self-efficacy to regulate positive and negative affect was associated with perceived self-efficacy to manage academic activities, to resist peer pressure, and to feel empathy for others. However, this was a study of older adolescents and it did not evaluate emotional well-being outcomes associated with perceived control over emotion. Bolger & Patterson (2001) found that greater internal perceived control in maltreated youth was associated with fewer internalizing symptoms. However, this study evaluated general perceived control, not perceived control for regulating emotion specifically.

A rich and conceptually very similar line of research by Carol Dweck and colleagues has shown that people hold implicit theories about the malleability of personal attributes or capabilities in domains ranging from intelligence to personality to emotion. These implicit theories tap individuals' internal working models for how much control they believe they have over various aspects of the self. Such work distinguishes between *incremental theorists* who believe that attributes can be changed or developed and *entity theorists* who believe that attributes are fixed and uncontrollable (e.g. Dweck, 1991; Hong, Chiu, Dweck, Lin, & Wan, 1999). Consequently, given they believe that change is possible, incremental theorists tend to be more motivated to persevere in the face of challenge, whereas entity theorists become de-motivated under stress or threat and are more likely to experience helplessness (Dweck & Leggett, 1988).

A modest body of work over the past decade suggests that individuals' implicit theories about the controllability of their emotions may have important mental health

consequences. People who endorse more of an entity theory of emotion tend to have higher levels of depressive symptoms and lower well-being in cross-sectional designs (DeCastella, Goldin, Jazaieri, Ziv, Dweck, & Gross, 2013) and over time (Tamir, John, Srivastava, & Gross, 2007; Romero, Master, Paunesku, Dweck, & Gross, 2014). Entity emotion theorists have also been found to have poorer social adjustment during a major life transition, such as starting college (Tamir et al, 2007). One of the possible mechanisms through which these implicit theories may influence mental health and social outcomes is through emotion regulation skill and strategy use. Entity theorists have been found to be more sensitive and motivated to avoid negative stimuli and to use fewer emotion regulation strategies in response to negative affect (Schroeder, Dawood, Yalch, Donnellan, & Moser 2015; Kappes & Schikowski, 2013). Moreover, they have also been found to be less likely to use reappraisal and report lower emotion regulation self-efficacy (Tamir et al, 2007; DeCastella et al, 2013).

Yet, how such beliefs about emotion impact adolescent well-being and how they develop remains an open question, given that almost all of the prior work on implicit theories of emotion has been with adult samples. However, given the dramatic psychological changes and increasing number of social and academic challenges that adolescents must adapt to, implicit theories may play an especially important role during this period. To our knowledge, only one study to date has examined implicit theories of emotion in adolescents (Romero et al, 2014). Following an early adolescent cohort across middle school, the authors found that adolescents within lower well-being in sixth grade were more likely to increase in well-being over time the more they believed that their

emotions were malleable. In addition, believing emotions were changeable was associated with lower levels of depression across time.

Work on other implicit theories in adolescents' provides additional reason to suspect that implicit theories emotion may also be associated with important psychosocial outcomes. Miu, Yeager, Sherman, Pennebaker, & Trzesniewski (2014) conducted a school-based intervention with 9th graders aimed at shifting theories of personality to be more incremental. They found that the intervention reduced the prevalence of depression in these adolescents' by 40 percent. Another study found that an intervention to shift implicit theories of personality from being more fixed to more growth minded reduced hostile attributions and aggressive desires within high schoolers' over the course of 8 months (Yeager, Miu, Powers, & Dweck, 2013). If implicit theories about personality have important consequences for mental health, it seems reasonable to suspect that implicit theories of emotion would as well.

The Present Study

The goal of the present study was to examine the impact of implicit theories of emotion on adolescent emotional and behavioral functioning. We focused on a wide age range of children in order to track potential developmental shifts in beliefs. To our knowledge, no prior work has considered the link between implicit beliefs about emotion and aggressive behaviors. As previously discussed, prior research has established a clear link between poor self-regulation and externalizing problems including aggression (Cauuffman, Steinberg, & Piquero, 2005). Therefore, beliefs about the controllability of emotion may also predict anti-social or aggressive behavior. Finally, prior work has called for the investigation of implicit theories in clinical populations (Romero et al,

2014), but to date, virtually no such studies have been done with adult or adolescent samples (for an exception see DeCastella, Goldin, Jazaieri, Heimberg, Dweck, & Gross, 2015). Given that youth who have experienced early adversity, such as maltreatment or exposure to domestic violence, are known to have deficits in emotional competence and regulation, (Kim & Cicchetti, 2010), they may also be more likely to view emotions as uncontrollable. Therefore, to test these ideas, we recruited a sample of maltreated adolescents and a control sample, matched on age, gender, and ethnicity, from nearby low-income neighborhoods. The high variability in emotional and behavioral problems within this population allowed us to better test the associations between beliefs about emotion and mental health.

Given maltreated youth are less likely to come from family environments in which emotion regulation and processing is taught and supported, we hypothesized that maltreated youth would be more likely to believe they have less control over their emotions. Secondly, we hypothesized that greater perceived control over emotion would be associated with fewer internalizing symptoms. Finally, we hypothesized that greater perceived control over emotion would also be predictive of lower levels aggression.

METHODS

Participants

A sample of 181 pre-adolescents and adolescents, ages 10-17 ($M = 13.8$, $SD = 2.11$), 112 of whom were maltreated, participated in the study. The sample was 48% female and ethnically diverse: 42.5% Latino, 23.2% White, 20.4% mixed ethnicity, 5.5% African American, 1% American Indian, and 1% were Asian.

The maltreated sample was comprised of children who had been removed from parental custody due to substantiated neglect or physical, sexual, or emotional abuse. They were recruited from an emergency youth shelter on the West Coast of the United States. Because the children had been removed from parental care, the Presiding Judge of Juvenile Court granted consent for children in the maltreated sample. For 32% of participants, this was their first time staying at the shelter. At the time of data collection, participants' current length of stay at the youth shelter ranged from 1 day to 6 months. Maltreated children were ineligible for recruitment if they were incapable of communicating with the researchers in English or if they had a documented intellectual or developmental disability. Over 90% of the total number of children in the shelter who were approached agreed to participate in the study.

The non-maltreated sample was comprised of children recruited from schools and community agencies in nearby low-income, predominantly ethnic minority neighborhoods. These neighborhoods were demographically equivalent to those from which most of the maltreated children were removed. All children were currently residing with at least one parent, reducing the likelihood that they had ever been removed from parental custody due to maltreatment. As with the maltreated sample, children were considered ineligible for the non-maltreated sample if they did not speak English or if they had an intellectual or developmental disability. Parents provided consent for their children to participate in the study.

The maltreated and non-maltreated sample were demographically matched with respect to age, gender, and Latino ethnicity (which was the ethnic group that had the largest representation in our sample). No group differences were found for age, gender,

and Latino ethnicity , all $ts < 1.806$, $ps > .074$.

Procedure

This study was part of a larger research project examining the impact of maltreatment on children's cognitive, social, and emotional development. The University of California-Irvine's institutional review board approved all study procedures.

Participants were told that this research was designed to study children's thoughts and feelings. In both samples, children provided written assent and were administered a questionnaire from a larger battery of measures. Of relevance to the present study were measures that assessed demographics, theories of emotion, internalizing symptoms, aggression, and hyperactivity. Participants were thanked and debriefed upon completing the questionnaire. Children in the non-maltreated sample were given small prize for their participation.

Materials

Implicit Theories of Emotion. Personal beliefs about the controllability of emotion were assessed using a variant of the original 4-item Implicit Beliefs about Emotion Scale (DeCastella et al, 2013; see Tamir et al 2007 for the original general scale). Two items measured *incremental beliefs*: "If I want to, I can change the emotions that I have" and "I can learn to control my emotions." Two items measured *entity beliefs*: "The truth is, I have very little control over my emotions", and "No matter how hard I try, I can't really change the emotions that I have." The personal scale differs from the original general scale only in that in the general scale, the statements are phrased in the third person instead of the first person. For example, "I can learn to control my emotions" in the personal scale becomes "Everyone can learn to control their emotions" in the general

scale. DeCastella et al (2013) found that the personal scale explained unique variance in emotion regulation, psychological distress, and well-being over and above that of the general scale. Consequently, the personal scale was used in this study. Entity items were then reverse coded and averaged so that higher scores reflect incremental beliefs about emotion and lower scores reflect entity beliefs. The scale was treated as a continuous variable. This approach is consistent with previous research (Plaks & Stecher, 2007; DeCastella et al, 2013; Tamir et al., 2007) and avoids loss of power associated with typologizing dimensional variables (Cohen, Kamarck, & Mermelstein, 1983). For interpretation clarity, we refer to those with higher scores as holding incremental beliefs and those with lower scores as holding entity beliefs. Prior work has found the scale to have good internal consistency ($\alpha=.78$; Romero et al, 2014). In this sample internal consistency was .69.

Internalizing Symptoms. Internalizing symptoms were measured using the Strengths and Difficulties Questionnaire, a measure of global mental health in children ages 3 to 16 (Goodman, 1997). The SDQ is well-validated (Goodman & Scott, 1999; Goodman & Goodman, 2009) and widely used to assess psychological functioning in children and adolescents (Vostanis, 2006). The scale consists of 25 questions that assess various positive and negative aspects of the child's behavior. Children respond to each item on a 3-point Likert scale by stating whether the behavior is not true (0), sometimes true (1), or very true (2) of them. The scale has five psychological subscales of five items each: Hyperactivity (e.g. "I am restless, I cannot stay still for long"), Conduct Problems (e.g. "I fight a lot; I can make other people do what I want"), Emotion Problems ("I am

often unhappy, depressed, or tearful”), Peer Problems (“Other children or young people pick on or bully me”), and Prosocial Behavior (“I am kind to younger children”).

Total problem behaviors (internalizing and externalizing) were calculated by combining scores from the Hyperactivity, Conduct Problems, Emotion Problems, and Peer Problems subscales. In this sample internal consistency was .69. Internalizing problems were calculated by combining scores from the Emotional and Peer Problems subscales for a total of 10 items. Two sample items from the Internalizing Symptoms subscale are “I have many fears. I am easily scared” and “I am often unhappy, depressed, or tearful.” In this sample internal consistency was .69.

Aggression. Levels of aggression were calculated using the 23-item Reactive-Proactive Aggression scale (Raine et al, 2006). Participants respond on a 3-point Likert scale regarding the frequency in which they have engaged in the type of behavior described in each item, as follows: never (0), sometimes (1) or often (2). The instrument yields a total score for aggression and scores for two subscales: proactive aggression (12 items) and reactive aggression (11 items). These subscales represent a 2-factor model with acceptable fit indices, based on data from samples in the U.S. (Raine et al. 2006). Sample items from the Proactive Aggression subscale include: “Taken things from other students”, “Used physical force to get others to do what you want”, and “Threatened and bullied someone”. Sample items from the Reactive Aggression subscale include: “Yelled at others when they have annoyed you”, “Had temper tantrums”, and “Gotten angry or mad when you lost a game”. In this sample internal consistency was high ($\alpha = .91$).

Analyses

The first set of analyses was conducted to investigate whether implicit beliefs about emotion predicted emotional and behavioral problems. We constructed hierarchical multiple regression models to determine whether adolescents who believed they could control their emotions had fewer internalizing symptoms and lower levels of aggression. These analyses provide estimates for how much implicit beliefs are uniquely associated with these mental health outcomes, adjusting for important covariates. In order to determine whether maltreatment was associated with greater beliefs that emotions cannot be controlled, we first conducted an independent samples t-test to compare means between groups. In addition, we conducted a likelihood ratio chi-square predicting whether maltreatment status predicted the likelihood of endorsing an incremental theory of emotion (coded 1) versus an entity theory (coded 0). Participants who scored 3 or less on the Implicit Theories of Emotion scale were classified as endorsing an entity theory; participants who scored greater than 3 were classified as endorsing an incremental theory. We selected 3 as the cut-off score because a score of 3 represents “neither agree or disagree” about whether or not emotions can be controlled, and all values less than 3 indicate agreement with the belief that emotions cannot be changed or controlled. We believe this is a conservative test of the hypothesis because means greater than 3 but less than 4 only suggest a partial endorsement of incremental beliefs, nevertheless, these scores were classified as endorsing an incremental belief. All models were conducted using SPSS statistical software.

RESULTS

Preliminary Analyses

Consistent with prior research, implicit theories of emotion were not related to gender or ethnicity. Therefore these variables are not discussed further. Implicit theories were also unrelated to age and maltreatment status. As expected, higher scores on implicit beliefs (indicating greater incremental theory endorsement) were negatively correlated with internalizing symptoms, aggression, and hyperactivity. We compared the reactive and proactive aggression subscales on the Reactive and Proactive Aggression Questionnaire and they were highly correlated, $r(179) = .68, p < .001$. Thus, we decided to use the full RPQ scale for analyses of aggression. Consistent with prior work, maltreatment status was positively correlated with internalizing problems and with aggression. Means, standard deviations, ranges, internal consistencies, and correlations for all variables are presented in Table 1.

Table 1
Means and Correlations of Primary Variables

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>Correlations</i>				
			<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Implicit Theory of Emotion	3.65	0.75	-	0.461***	-.383***	-.395***	-.07
2. Internalizing Symptoms	0.62	0.49		-	.392***	.283***	.262***
3. Reactive-Proactive Aggression	0.4	0.32			-	.429***	.243***
4. Hyperactivity	0.85	0.43				-	-.074
5. Maltreatment Status							-

* $p < .05$ ** $p < .01$ *** $p < .001$

Implicit Theories and Internalizing Symptoms

Consistent with our hypothesis, implicit theories were negatively correlated with internalizing symptoms, such that participants with greater perceived control over their emotions tended to have lower levels of internalizing symptoms, $r(180) = -.46, p < .001$. The multiple regression analyses provided further support for the hypothesis that as beliefs about the controllability of emotion increase, internalizing symptoms will tend to decrease. In step 1 of the model, age, gender, maltreatment status, and hyperactivity were entered as predictors of internalizing symptoms. Hyperactivity was entered as a covariate because it is a marker of behavioral self-regulation and impulse control. Therefore, it allowed us to distinguish between different aspects of control: behavioral control versus perceptions of emotional control. Gender ($b = -.18, t(4,175) = -4.02, p < .001$), maltreatment status ($b = .17, t(4,175) = 3.60, p < .001$), and hyperactivity ($b = .31, t(4,175) = 5.50, p < .001$), all significantly predicted internalizing symptoms, $R^2_{adj} = .24, F(4,175) = 15.28, p < .001$. In step 2 of the model, implicit beliefs about emotion were added. Results showed that implicit beliefs about emotion made a significant contribution to the model ($b = -.15, t(4,175) = -4.66, p < .001$) and explained unique variance in internalizing symptoms above and beyond the prior covariates, $R^2_{adj\ change} = .08, F_{change}(1, 174) = 21.69, p < .001$. Although all significant predictors from model 1 remained significant in model 2, implicit beliefs about emotion made the largest contribution to the overall model, $\beta = -.32, p < .001$. Overall, the full model explained 32.2% of the variance in internalizing symptoms. Table 2 displays the standardized regression coefficients (β), and R^2 for the models.

Table 2
Relation Between Implicit Theories and Internalizing
Symptoms

	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Constant	0.12	0.17		0.78	0.21	
Age	0.02	0.01	0.08	0.01	0.01	0.08
Male	-0.19***	0.05	0.26	-0.16**	0.04	0.22
Maltreatment	0.17***	0.05	0.24	0.15**	0.05	0.21
Hyperactivity/Inattention	0.31***	0.06	0.36	0.20**	0.06	0.24
Implicit Theory of Emotion				-0.15***	0.03	0.32
<i>R</i> ²		0.26			0.34	
<i>F</i>		15.28***			18.00***	
<i>Change R</i> ²		0.26			0.08***	

Note. **p*<.05 ***p*<.01 ****p*<.001

Implicit Theories and Aggression

Endorsing more of an incremental theory of emotion was associated with lower aggression, providing initial support for our hypothesis, $r(180) = -.38, p < .001$. Next, we conducted a multiple regression analyses to find out whether or not implicit beliefs about emotion predict aggressive behaviors. Building off our model for internalizing symptoms, we first entered age, gender, maltreatment status, hyperactivity, and internalizing symptoms. Given implicit beliefs significantly predicted internalizing symptoms and internalizing symptoms and aggression were significantly correlated, we wanted to ensure that the potential link between implicit beliefs and aggression was not just

operating through internalizing symptoms. In model 1, gender ($b=-.12$ $t(5,173)=2.72$, $p=.007$), hyperactivity ($b=.30$ $t(5,173)=5.54$, $p<.001$), maltreatment status ($b=-.13$ $t(5,173)=3.00$, $p=.003$), , and internalizing symptoms were all significant predictors of aggression, $R^2_{adj}=.34$, $F(5,173)=18.59$, $p<.001$. Then, in step two, we entered implicit theories into the model. Model two was also statistically significant, $R^2_{adj\ change}=.02$, F change (1, 172)=5.45, $p=.02$. This indicated that implicit beliefs made a unique contribution to predicting levels of aggression, such that greater perceived control over emotion was associated with lower levels of aggression ($b=-.07$, $t(1, 172)= -2.33$, $p=.02$). Overall, the full model accounted for 34.4% of the variance in aggression. Table 3 displays the standardized regression coefficients (β), and R^2 , for the models.

Table 3
Relation Between Implicit Theories and Aggressive Behaviors

	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Constant	-0.32	0.15		0.13	0.21	
Age	0.01	0.01	0.08	0.01	0.01	0.08
Male	-0.12**	0.04	0.18	0.12**	0.04	0.18
Maltreatment	0.13**	0.04	0.19	0.13**	0.04	0.19
Hyperactivity/In attention	0.30***	0.04	0.36	0.27**	0.06	0.33
Internalizing Symptoms	.254***	0.07	0.27	0.20**	0.07	0.21
Implicit Theory of Emotion				-.074*	0.03	-0.17
R^2		0.35			0.37	
F		18.59**			16.80***	
$Change R^2$		0.35			0.02*	

Note. * $p<.05$ ** $p<.01$ *** $p<.001$

Maltreatment and Implicit Theories

Of the adolescents in our overall sample, 21.5% had a mean of 3 or lower on their implicit beliefs about emotion, indicating they did not believe they could control their emotions. When we compared scores based upon maltreatment status, 14.5% of non-maltreated adolescents scored a 3 or below, compared to 25.9% of maltreated youth, $LR \chi^2(1, 179) = 3.20, p = .064$. Thus, a non-significant tendency was found for maltreated youth to be less likely to believe they can control their emotions. However, an independent samples t-test, using the complete linear scale for implicit theories of emotion showed no significant difference between maltreated ($M = 3.62, SD = .79$) and non-maltreated ($M=3.72, SD=.68$) youth, $t(179) = .89, p = .38$. Thus, we did not find support for our hypothesis that maltreated adolescents would be more likely than non-maltreated adolescents to view their emotions as uncontrollable.

DISCUSSION

Despite a great deal of research on implicit beliefs in the social and educational domain (Dweck, Chiu, & Hong, 1995; Blackwell, Trzesniewski, & Dweck, 2007; Chiu, Hong, & Dweck, 1997; Levy, Stroessner, & Dweck, 1998; Chiu, Dweck, Tong, Fu, 1997), very little is known about implicit beliefs about emotion and even less about how these mindsets operate in children and adolescents (Romero et al, 2014; Tamir et al, 2007; DeCastella et al, 2013). The current study had three central aims: to extend previous work on implicit theories of emotion to a wider range of adolescents than has been previously studied, to investigate whether implicit beliefs about emotion play an

important role in externalizing and internalizing behaviors, and to explore how early adversity may impact adolescents' implicit theories of emotion.

Our findings replicated and extended previous work in adults and early adolescents on the role of implicit theories of emotion in internalizing symptoms (Tamir et al, 2007; DeCastella et al, 2013; Romero et al, 2014). Adolescents who believed they could control their emotions had lower levels of internalizing symptoms. Moreover, these implicit beliefs predicted internalizing symptoms after adjusting statistically for gender, hyperactivity and inattention, and the experience of maltreatment, all of which are well established in the literature as predictive of internalizing problems (Owens & Hinshaw, 2016; Lycett, Sciberras, Mensah, & Hiscock, 2015; Leadbeater et al, 1999; Crijnen, Achenbach, & Verhulst, 1997; Kim & Cicchetti, 2010; Cicchetti & Toth, 2005) and which were significantly associated with internalizing problems in this particular sample. These findings suggest that beliefs and expectancies about emotion guide thoughts, attention, and behavior in ways that may influence how adolescents process and regulate emotion.

Moreover, this study is the first to our knowledge to investigate whether or not implicit theories of emotion are linked to aggressive behaviors in youth. We found support for our hypothesis that adolescents who believed they had less control over their emotion were more aggressive. Even after adjusting for the same covariates as in the previous model as well as internalizing symptoms, implicit beliefs remained a significant predictor of aggressive behavior. This is consistent with prior work showing that adolescents who score high on externalizing problems tend to have problems with self-regulation and effortful control (Thompson, Zalewski & Lengua, 2014; Franken et al,

2015; Krueger et al, 1996; Cauffman et al, 2005). Beliefs about control remained significant even after controlling for hyperactivity and inattention. This suggests that the link between implicit theories and aggression cannot simply be explained by an inability to regulate behavior or inhibit impulses. Perceptions of control may play an important role in understanding *why* certain adolescents struggle with self-regulation. Specifically, adolescents who hold an implicit view that emotion is outside of their control may be less motivated to engage in emotion regulation strategies. In the context of aggression, holding a view that emotion is harder to control may make youth more likely to engage in aggressive or anti-social acts in response to their negative emotions instead of attempting to calm themselves or diffuse their anger more constructively.

Consistent with previous work on the elevated risk for psychopathology amongst maltreated youth, maltreatment was positively associated with both internalizing and externalizing problems. However, we did not find strong support for our hypothesis that maltreated adolescents would more likely to believe that they cannot control their emotions. Still, the results from the likelihood ratio chi-square were trending in the expected direction, and given the sensitivity of this test to sample size, it is possible that our study did not have sufficient power to detect differential effects of maltreatment on adolescents' implicit beliefs. Future work should test these associations within larger and more balanced cohorts of maltreated and non-maltreated youth.

Given that problems with emotion regulation and processing are central features of many Axis I and Axis II mental disorders and that adolescence is a period in which rates of mood and anxiety disorders increase significantly, these findings suggest that targeting adolescents' implicit beliefs about their ability to control their emotions may be

an important area for intervention (Gross 1998b; Merikangas et al, 2010). Adolescents may be less likely to engage in effective strategies for regulating emotion if they do not first believe that changing their emotional experience is something that is within their control. Future research should build upon these findings and test the direct links between implicit beliefs and emotion regulation skill. Findings out of two recent studies provided novel evidence suggesting that adults who endorse more of an entity belief about emotion (lack of control) are more sensitive to negative affective stimuli and more motivated to avoid it (Kappes & Skikowski, 2013) and engage in fewer emotion regulation strategies (Schroder et al, 2015). Therefore, future studies should examine whether adolescents who believe they have greater control over their emotions use different strategies or more strategies to regulate emotion than adolescents who believe they have less control and whether or not those differences perhaps mediate the link between implicit theories and internalizing and externalizing behavior outcomes.

In addition, future research should strive to unpack how implicit theories develop over the course of childhood and early adolescence. In our study, implicit theories were not associated with age, suggesting that by early adolescence, youth may have already solidified these implicit beliefs. Therefore, considering how factors such as parental attachment, early adversity, and temperament may influence the development of such theories is an important area of future work.

There are several limitations of our study that should be noted. First, because this is one of the first studies of adolescents on this particular topic, these findings ought to be replicated with other adolescent samples and in other contexts and in order to ensure that these findings are generalizable. Secondly, although these findings indicate that implicit

theories and emotional and behavioral problems are closely linked, the associations are only correlational, thus we cannot determine whether implicit beliefs about emotion play any sort of causal role affecting emotion or behavioral outcomes. Future research should attempt to manipulate adolescents' beliefs about their ability to control their emotions and see whether or not this has an impact on their internalizing or externalizing behaviors. Moreover, the cross-sectional nature of the designs means that we cannot infer directionality from these findings. It's possible that implicit theories influence the development of internalizing symptoms and aggression, but the opposite pathway is also possible, specifically that participants who are more distressed are more likely to subsequently develop a belief that their emotions cannot be controlled. Future research should follow adolescents over time (see Romero et al, 2014 for an example) to see whether beliefs about emotion predict emotional and behavioral functioning and well-being across time.

In summary, our work demonstrates the important role that beliefs about one's ability to control emotion have on adolescents' psychological health. This study is the first to provide evidence that these beliefs do not only matter for internalizing symptoms but also aggressive behaviors. What is more, it's the first to examine these processes within a sample of youth who have experience early adversity. Believing that one does not have control over one's emotions may create a self-fulfilling prophecy in which these adolescents' are less motivated to self-regulate and therefore are more distressed, perpetuating the belief that they cannot change how they feel. Given the tremendous biological and psychological changes during this developmental period, adolescents are especially vulnerable to the power of negative emotions but also potentially more

amenable to growth and change. Undoubtedly, a multitude of factors influence the ability to regulate emotion effectively. Yet many of these factors are difficult to change or outside of the adolescent's control. In contrast, adolescents' beliefs—including those about emotions—can be influenced, making this a particularly important area of study.

REFERENCES

- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical psychology review, 30*(2), 217-237.
- Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental psychology, 25*(5), 729.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational behavior and human decision processes, 50*(2), 248-287.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child development, 74*(3), 769-782.
- Beeghly, M., & Cicchetti, D. (1994). Child maltreatment, attachment, and the self system: Emergence of an internal state lexicon in toddlers at high social risk. *Development and psychopathology, 6*(01), 5-30.
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child development, 78*(1), 246-263.
- Bolger, K. E., & Patterson, C. J. (2001). Pathways from child maltreatment to internalizing problems: Perceptions of control as mediators and moderators.

- Development and Psychopathology*, 13(04), 913-940. Carballo, Serrano-Drozdowskyj, Nieto, Neira-Hernando, Perez-Fominaya, Molina-Pizarro, De Leon-Martinez, Baca-Garcia, 2014
- Carballo, J. J., Serrano-Drozdowskyj, E., Garcia Nieto, R., Diaz de Neira-Hernando, M., Perez-Fominaya, M., Molina-Pizarro, C. A.... & Baca-Garcia, E. (2014). Prevalence and correlates of psychopathology in children and adolescents evaluated with the strengths and difficulties questionnaire dysregulation profile in a clinical setting. *Psychopathology*, 47(5), 303-311.
- Cauffman, E., Steinberg, L., & Piquero, A. R. (2005). PSYCHOLOGICAL, NEUROPSYCHOLOGICAL AND PHYSIOLOGICAL CORRELATES OF SERIOUS ANTISOCIAL BEHAVIOR IN ADOLESCENCE: THE ROLE OF SELF-CONTROL*. *Criminology*, 43(1), 133-176.
- Chiu, C. Y., Dweck, C. S., Tong, J. Y. Y., & Fu, J. H. Y. (1997). Implicit theories and conceptions of morality. *Journal of Personality and Social Psychology*, 73(5), 923.
- Chiu, C. Y., Hong, Y. Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of personality and social psychology*, 73(1), 19.
- Cicchetti, D., & Toth, S. L. (2005). Child maltreatment. *Annu. Rev. Clin. Psychol.*, 1, 409-438.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior*, 385-396.

- Crijnen, A. A., Achenbach, T. M., & Verhulst, F. C. (1997). Comparisons of problems reported by parents of children in 12 cultures: total problems, externalizing, and internalizing. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(9), 1269-1277.
- De Castella, K., Goldin, P., Jazaieri, H., Heimberg, R. G., Dweck, C. S., & Gross, J. J. (2015). Emotion beliefs and cognitive behavioural therapy for social anxiety disorder. *Cognitive behaviour therapy*, 44(2), 128-141.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American psychologist*, 41(10), 1040.
- Dweck, C. S. (1991, January). Self-theories and goals: Their role in motivation, personality, and development. In *Nebraska symposium on motivation* (Vol. 38, No. 3, pp. 199-235).
- Dweck, C. S. (1996). Implicit theories as organizers of goals and behavior. Gollwitzer, Peter M. (Ed); Bargh, John A. (Ed), (1996). *The psychology of action: Linking cognition and motivation to behavior.* , (pp. 69-90). New York, NY, US: Guilford Press, xv, 683 pp.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological review*, 95(2), 256.
- Dweck, C. S., Chiu, C. Y., & Hong, Y. Y. (1995). Implicit theories and their role in judgments and reactions: A word from two perspectives. *Psychological inquiry*, 6(4), 267-285.

- Dyson, R., Robertson, G. C., & Wong, M. M. (2015). Brief report: Peer group influences and adolescent internalizing problems as mediated by effortful control. *Journal of adolescence, 41*, 131-135.
- Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child development, 76*(5), 1055-1071.
- Eisenberg, N., & Sulik, M. J. (2012). Emotion-related self-regulation in children. *Teaching of Psychology, 39*(1), 77-83.
- Fairchild, G., Goozen, S. H., Calder, A. J., & Goodyer, I. M. (2013). Research review: evaluating and reformulating the developmental taxonomic theory of antisocial behaviour. *Journal of Child Psychology and Psychiatry, 54*(9), 924-940.
- Finnegan, R. A., Hodges, E. V., & Perry, D. G. (1998). Victimization by peers: Associations with children's reports of mother-child interaction. *Journal of personality and social psychology, 75*(4), 1076.
- Franken, A., Moffitt, T. E., Steglich, C. E., Dijkstra, J. K., Harakeh, Z., & Vollebergh, W. A. (2015). The Role of Self-Control and Early Adolescents' Friendships in the Development of Externalizing Behavior: The SNARE Study. *Journal of youth and adolescence, 1*-12.
- Gaensbauer, T. J. (1982). Regulation of emotional expression in infants from two contrasting caretaking environments. *Journal of the American Academy of Child Psychiatry, 21*(2), 163-170.

- Garnefski, N., & Kraaij, V. (2006). Relationships between cognitive emotion regulation strategies and depressive symptoms: A comparative study of five specific samples. *Personality and Individual Differences, 40*(8), 1659-1669.
- Garnefski, N., Kraaij, V., & van Etten, M. (2005). Specificity of relations between adolescents' cognitive emotion regulation strategies and internalizing and externalizing psychopathology. *Journal of Adolescence, 28*(5), 619-631.
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of child psychology and psychiatry, 38*(5), 581-586.
- Goodman, A., & Goodman, R. (2009). Strengths and difficulties questionnaire as a dimensional measure of child mental health. *Journal of the American Academy of Child & Adolescent Psychiatry, 48*(4), 400-403.
- Goodman, R., & Scott, S. (1999). Comparing the Strengths and Difficulties Questionnaire and the Child Behavior Checklist: is small beautiful?. *Journal of abnormal child psychology, 27*(1), 17-24.
- Grasso, D. J., Dierkhising, C. B., Branson, C. E., Ford, J. D., & Lee, R. (2015). Developmental patterns of adverse childhood experiences and current symptoms and impairment in youth referred for trauma-specific services. *Journal of abnormal child psychology, 1-16*.
- Gross, J. J. (1998). The emerging field of emotion regulation: an integrative review. *Review of general psychology, 2*(3), 271.
- Hodges, E. V., & Perry, D. G. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of personality and social psychology, 76*(4), 677.

- Hong, Y. Y., Chiu, C. Y., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social psychology*, 77(3), 588.
- Kappes, A., & Schikowski, A. (2013). Implicit theories of emotion shape regulation of negative affect. *Cognition & emotion*, 27(5), 952-960.
- Karoly, P. (1993). Mechanisms of self-regulation: A systems view. *Annual review of psychology*, 44(1), 23-52.
- Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry*, 51(6), 706-716.
- Krueger, R. F., Caspi, A., Moffitt, T. E., White, J., & Stouthamer-Loeber, M. (1996). Delay of Gratification, Psychopathology, and Personality: Is Low Self-Control Specific to Externalizing Problems?. *Journal of personality*, 64(1), 107-129.
- Lahey, B. B., Flagg, E. W., Bird, H. R., Schwab-Stone, M. E., Canino, G., Dulcan, M. K., ... & Horwitz, S. M. (1996). The NIMH methods for the epidemiology of child and adolescent mental disorders (MECA) study: Background and methodology. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(7), 855-864.
- Larson, R., & Ham, M. (1993). Stress and "storm and stress" in early adolescence: The relationship of negative events with dysphoric affect. *Developmental Psychology*, 29(1), 130.

- Leadbeater, Bonnie J., et al. "A multivariate model of gender differences in adolescents' internalizing and externalizing problems." *Developmental psychology* 35.5 (1999): 1268.
- Lester, L., Dooley, J., Cross, D., & Shaw, T. (2012). Internalising symptoms: An antecedent or precedent in adolescent peer victimisation. *Australian Journal of Guidance and Counselling*, 22(02), 173-189.
- Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology*, 74(6), 1421.
- Lycett, K., Sciberras, E., Mensah, F. K., & Hiscock, H. (2015). Behavioral sleep problems and internalizing and externalizing comorbidities in children with attention-deficit/hyperactivity disorder. *European Child & Adolescent Psychiatry*, 24(1), 31-40. doi:<http://dx.doi.org/10.1007/s00787-014-0530-2>
- Manly, J. T., Kim, J. E., Rogosch, F. A., & Cicchetti, D. (2001). Dimensions of child maltreatment and children's adjustment: Contributions of developmental timing and subtype. *Development and psychopathology*, 13(04), 759-782.
- McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: A prospective study. *Behaviour research and therapy*, 49(9), 544-554.
- McLaughlin, K. A., Aldao, A., Wisco, B. E., & Hilt, L. M. (2014). Rumination as a transdiagnostic factor underlying transitions between internalizing symptoms and aggressive behavior in early adolescents. *Journal of abnormal psychology*, 123(1), 13.

- Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., ... & Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 49*(10), 980-989.
- Miu, A. S., Yeager, D. S., Sherman, D., Pennebaker, J., & Trzesniewski, K. (2014). Preventing Depression by Teaching Adolescents That People Can Change: Nine-Month Effects of a Brief Incremental Theory of Personality Intervention.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: a developmental taxonomy. *Psychological review, 100*(4), 674.
- Moffitt, T. E. (2003). Life-course-persistent and adolescence-limited antisocial behavior: a 10-year research review and a research agenda.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social development, 16*(2), 361-388.
- Oldehinkel, A. J., Hartman, C. A., Ferdinand, R. F., Verhulst, F. C., & Ormel, J. (2007). Effortful control as modifier of the association between negative emotionality and adolescents' mental health problems. *Development and psychopathology, 19*(02), 523-539.
- Owens, E. B., & Hinshaw, S. P. (2016). Childhood conduct problems and young adult outcomes among women with childhood attention-deficit/hyperactivity disorder (ADHD). *Journal of Abnormal Psychology, 125*(2), 220-232.
doi:<http://dx.doi.org/10.1037/abn0000084>

- Patalay, P., Fonagy, P., Deighton, J., Belsky, J., Vostanis, P., & Wolpert, M. (2015). A general psychopathology factor in early adolescence. *The British Journal of Psychiatry*, 207(1), 15-22.
- Plaks, J. E., & Stecher, K. (2007). Unexpected improvement, decline, and stasis: a prediction confidence perspective on achievement success and failure. *Journal of personality and social psychology*, 93(4), 667.
- Pollak, S. D., Cicchetti, D., Hornung, K., & Reed, A. (2000). Recognizing emotion in faces: developmental effects of child abuse and neglect. *Developmental psychology*, 36(5), 679.
- Raine A, Dodge K, Loeber R, Gatzke-Kopp L, Lynam D, Reynolds C et al (2006) The reactive–proactive aggression questionnaire: differential correlates of reactive and proactive aggression in adolescent boys. *Aggress Behav* 32:159–171
- Romero, C., Master, A., Paunesku, D., Dweck, C. S., & Gross, J. J. (2014). Academic and emotional functioning in middle school: The role of implicit theories. *Emotion*, 14(2), 227.
- Roza, S. J., Hofstra, M. B., van der Ende, J., & Verhulst, F. C. (2003). Stable prediction of mood and anxiety disorders based on behavioral and emotional problems in childhood: A 14-year follow-up during childhood, adolescence, and young adulthood. *American Journal of Psychiatry*, 160(12), 2116-2121.
- Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2015). The role of implicit theories in mental health symptoms, emotion regulation, and hypothetical treatment choices in college students. *Cognitive Therapy and Research*, 39(2), 120-139.

- Sentse, M., Kretschmer, T., Haan, A., & Prinzie, P. (2016). Conduct Problem Trajectories Between Age 4 and 17 and Their Association with Behavioral Adjustment in Emerging Adulthood. *Journal of Youth and Adolescence*, 1-10.
- Shipman, K., Zeman, J., Penza, S., & Champion, K. (2000). Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development and Psychopathology*, 12(01), 47-62.
- Shipman, K. L., Schneider, R., Fitzgerald, M. M., Sims, C., Swisher, L., & Edwards, A. (2007). Maternal Emotion Socialization in Maltreating and Non-maltreating Families: Implications for Children's Emotion Regulation. *Social Development*, 16(2), 268-285.
- Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child development*, 74(6), 1869-1880.
- Silove, D., Alonso, J., Bromet, E., Gruber, M., Sampson, N., Scott, K., ... & de Jonge, P. (2015). Pediatric-onset and adult-onset separation anxiety disorder across countries in the World Mental Health Survey. *American Journal of Psychiatry*. Tamir, M., John, O. P., Srivastava, S., & Gross, J. J. (2007). Implicit theories of emotion: affective and social outcomes across a major life transition. *Journal of personality and social psychology*, 92(4), 731.
- Thompson, S. F., Zalewski, M., & Lengua, L. J. (2014). Appraisal and coping styles account for the effects of temperament on pre-adolescent adjustment. *Australian journal of psychology*, 66(2), 122-129.

- Turner, H. A., Finkelhor, D., & Ormrod, R. (2010). Poly-victimization in a national sample of children and youth. *American journal of preventive medicine, 38*(3), 323-330.
- Van Oort, F. V. A., Greaves-Lord, K., Verhulst, F. C., Ormel, J., & Huizink, A. C. (2009). The developmental course of anxiety symptoms during adolescence: the TRAILS study. *Journal of Child Psychology and Psychiatry, 50*(10), 1209-1217.
- Vostanis, P. (2006). Strengths and difficulties questionnaire: Research and clinical applications. *Current Opinion in Psychiatry, 19*(4), 367-372.
doi:<http://dx.doi.org/10.1097/01.yco.0000228755.723>.
- Wills, T. A., Sandy, J. M., & Shinar, O. (1999). Cloninger's constructs related to substance use level and problems in late adolescence: a mediational model based on self-control and coping motives. *Experimental and clinical psychopharmacology, 7*(2), 122.
- Yeager, D. S., Miu, A. S., Powers, J., & Dweck, C. S. (2013). Implicit theories of personality and attributions of hostile intent: A meta-analysis, an experiment, and a longitudinal intervention. *Child development, 84*(5), 1651-1667