Peer Emotion Socialization and the Development of Aggressive Behavior in Adolescence

Sara Franklin-Gillette

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Peer Emotion Socialization and the Development of Aggressive Behavior in Adolescence

A thesis submitted in partial fulfillment of the requirement
for the Degree of Bachelor of Arts in Psychological Sciences from
The College of William & Mary

by

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Accepted for Honors
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Abstract

Friend socialization of anger may play a role in the development of aggression given the initial findings on peer emotion socialization (Klimes-Dougan et al., 2014), peer influence on aggression (e.g., Dishion & Patterson, 2006), and the role of anger in aggression (e.g., Bookhout, Hubbard, & Moore, 2018). However, little research has examined the potential influence of peer emotion socialization on adolescent aggression (Miller-Slough & Dunsmore, 2016). This study addresses the influence of friend anger socialization in early-adolescent best friend dyads on adolescent aggression concurrently and four years later. Participants were 202 youth participating in 101 best friend dyads (Time 1(T1): $M_{age} = 12.68$, 52.5% girls, 73.3% White; Time 2 (T2): $N = 169$, $M_{age} = 14.70$; Time 3 (T3): $N = 121$, $M_{age} = 16.5$). Youth completed measures pertaining to their anger regulation (T1, T2), aggression (T1, T3), and the ways their best friend typically responds to their expressions of anger (T1). Parents also competed measures of their child’s aggression (T1, T3). Six Actor-Partner Interdependence Mediation Models (Kenny, 2015), were conducted with three examining unsupportive socialization and three examining supportive socialization responses. In each set, two models examined concurrent parent- and child-reported aggression separately, and one model examined T3 combined parent- and child-reports of child aggression. The results indicated that being unsupportive of a close friend’s anger is associated with increased concurrent aggression. In the longitudinal model, decreased anger regulation mediated the relation between providing unsupportive anger socialization and increased aggression four years later. Two supportive emotion socialization models indicated that receipt of supportive responses to anger from a close friend was linked to less concurrent aggression. In the child-reported model, increased anger regulation mediated the relation between receiving supportive anger socialization and decreased aggression. When
unsupportive, best friendships may escalate maladaptive patterns of anger regulation and aggression that persist through adolescence. When supportive, best friendships provide a constructive environment for adolescents to refine their expression and regulation of anger in adaptive ways that may help protect against concurrent behavior problems. These findings emphasize the importance of emotion socialization in processes of friend influence on externalizing behavior in adolescence.
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Social Development in Adolescence

In adolescence, the influence of the peer group and friends increases, growing throughout early adolescence, peaking in middle adolescence, and decreasing by late adolescence (Dishion & Piehler, 2009; Miller-Slough & Dunsmore, 2016; Steinberg & Monahan, 2007; Utržan, Piehler, & Dishion, 2018). Both the broader peer group and dyadic friendships have been implicated in important developmental changes during this stage, with friendships identified as a contributor to many of these changes (Dishion & Piehler, 2009). There are multiple key changes in the nature of friendships that make this developmental stage especially salient.

First, adolescence is characterized by increasing, unsupervised time spent with friends (Brechwald & Prinstein, 2011; Klimes-Dougan et al., 2014). From late childhood to mid adolescence, time spent with family decreases by nearly half, whereas time spent with friends increases, especially for girls (Larson & Richards, 1991). This time, often spent in close dyads, is less influenced and structured by the adult caregivers who served as the primary socializers throughout childhood (Brechwald & Prinstein, 2011). For these reasons, friends have the opportunity to have a greater influence due, in part, to increased time spent together.

Second, in adolescence, friendships become increasingly intimate and socially sophisticated, and help adolescents form multifaceted identities (Brechwald & Prinstein, 2011; Miller-Slough & Dunsmore, 2016). This intimacy consists of higher levels of emotional sharing, trust, and communication (Nickerson & Nagle, 2005). Therefore, unlike in childhood, adolescents increasingly turn to close friends for emotional support, in addition to and sometimes instead of their parents, thus practicing their developing emotional competency skills with peers in addition to family members (Nickerson & Nagle, 2005).
Third, adolescence is characterized as a time of identity development and maturation (Rageliene, 2016). Adolescents are more sensitive to emotional and social feedback from peers as they seek to develop a sense of identity embedded within their peer groups in addition to facets of their identity formed from within their families (Brechwald & Prinstein, 2011; Rageliene, 2016). The combination of these factors contributes to the elevated influence of friends in adolescence as compared to childhood.

One key issue in the field of adolescent friendship research is differentiating the unique contributions of socialization and selection effects in friendships. Selection effects account for similarities between friends that result from adolescents choosing friends who are similar to them. Socialization effects account for similarities that result from friends influencing each other over time (Brechwald & Prinstein, 2011). Using cross-sectional and correlational research designs when studying friendship does not permit conclusions regarding whether similarities between friends are the cause or the result of the friendship. Homophily theory states that both selection and socialization effects are present in adolescence and act reciprocally; adolescents choose friends who are similar to themselves and then become more similar through socialization (Brechwald & Prinstein, 2011; Klimes-Dougan, et al., 2014). The use of longitudinal research designs makes it possible to untangle these effects. As such, research using longitudinal designs has provided support for the notion that the unique contributions of both selection and socialization effects have been found in multiple domains of development, including areas such as aggression and social anxiety (Sijtsema et al, 2010; Van Zalk, Van Zalk, Kerr, & Stattin, 2011).

Though developmental research has often focused on the benefits of peer interactions and social bonding, more recently, research has focused on the so-called “dark side” of adolescent
friendships (Vitaro, Boivin, & Bukowski, 2009). It is possible that youth with behavior problems choose friends who are similar to them because they are drawn to the similarity in social style and behavior (Sijtsema et al., 2010; Van Zalk et al., 2011). It is also possible that these children’s behavior problems alienate them from other peers, thus pushing them towards other rejected, deviant peers, whose presence then escalates problem behavior (Sijtsema et al., 2010; Van Zalk, et al., 2011). Peer contagion entails the dynamic, reciprocal processes between peers that influence emotional and behavioral development in maladaptive ways (Dishion & Tipsord, 2011). Friends influence maladaptive behavior, including externalizing behavior such as aggression, defiance, and substance use, and internalizing behavior such as disordered eating and depression (Dishion & Tipsord, 2011). There are multiple pathways through which these processes may take place that are discussed below.

**Peer Socialization of Behavior**

Peer socialization of behavior encompasses many methods through which behavior is learned and reinforced in peer group settings and friend dyads. As Dishion and Patterson (2006) state, in adolescence, peer relationships are one of the “basic social ecologies within which antisocial behavior is displayed, practiced, learned, accelerated, or suppressed,” (p. 514). Brechwald & Prinstein (2011) propose four such mechanisms. First, adolescents may develop new behaviors by engaging in behavior they view as high status, such as imitating popular, antisocial peers. Second, adolescents may change their behavior to match or deviate from social norms of their own social group, a group they wish to be a part of, or a group from which they wish to distance themselves. Third, adolescents may engage in behavior that contributes to a self-identity that they desire or think that others desire. Lastly, adolescents may increase or decrease the
frequencies of specific behavior based on behavior reinforcement (rewards and punishment) from their peers.

Research on the fourth mechanism has garnered the greatest interest and is referred to as deviancy training. This field of research emerged from clinical research focused on the iatrogenic effects of group interventions for adolescents with behavior disorders (Dishion & Piehler, 2009). Dishion, McCord, and Poulin (1999) concluded that aggregating peers in adolescence, especially high-risk adolescents, even in intervention settings, can lead to increases in problem behavior. Deviancy training is a process through which friends and peers lead to increases in disruptive behavior by rewarding negative behavior or talk of such behavior (Deater-Deckard, 2001; Dishion et al., 1999). Examples of rewarding behavior includes laughter, praise, or other signs of approval (Vitaro et al., 2009). This phenomenon has also been shown to increase problem behavior in community settings, such as schools and friend dyads (Dishion & Piehler, 2009).

Most research on peer socialization of behavior in adolescence has focused on anti-social, externalizing behavior, primarily aggression and other delinquent behavior (Brechwald & Prinstein, 2011). This focus is well deserved, as association with deviant peers is one of the strongest predictors of youth externalizing behavior problems (Utržan et al., 2018). Some research has examined externalizing behavior as an overarching construct whereas other studies have examined specific types of problem behavior. Peer socialization of behavior (including deviancy training and modeling) has been implicated in aggression (Dishion, Véronneau, & Myers, 2010), substance abuse (Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, 2010; Patrick, Schulenberg, Maggs, & Maslowsky, 2016), and disruptive behavior disorders (Utržan et al., 2018).
The study of peer socialization of behavior comprises the bulk of research on peer contagion of behavior problems. Although these maladaptive behavior problems (e.g., aggression) are often thought to stem from an emotional base, namely, the dysregulation of negative emotions (Bookhout, Hubbard, & Moore, 2018), this area of research has focused mostly on socialization of behavior while neglecting to investigate the emotion competencies or lack thereof that underlie the behaviors (Dishion & Piehler, 2009). Thus, research on the influences of friends on development has focused mostly on peer socialization of behavior and, to a much lesser extent, on peer socialization of emotion. The field of emotion socialization, however, focuses on emotional interactions and their consequences for psychosocial development.

**Socialization of Emotion**

Emotion socialization is a social, transactional process through which children and adolescents learn, through interactions with others and cultural norms for emotional expressivity, how to manage their emotions appropriately in different social contexts (Eisenberg, Cumberland, & Spinrad, 1998; Miller-Slough et al., 2016; Zeman, Cassano, & Adrian, 2013). Emotion socialization can help youth develop adaptive emotion regulation skills and learn to express their emotions in culturally appropriate ways (Zeman et al., 2013). Parental emotion socialization is perhaps one of the most important influences on the development of young children’s emotion regulation abilities (Zeman et al., 2013). Although most of this research focuses on parents and on early childhood, emotion socialization remains a significant influence throughout later childhood and adolescence, and can be driven by siblings, peers, and other adults (Eisenberg et al., 1998; Zeman, et al., 2013).
Emotion socialization is often subdivided into direct and indirect methods of socialization. Direct methods of emotion socialization include contingent responses to a child’s emotions and discussion of emotions. Indirect emotion socialization consists of modeling of emotional behaviors and general family emotional climate (Eisenberg, et al., 1998; Zeman et al., 2013). Often the two categories overlap such that some socialization behaviors reflect aspects of both direct and indirect socialization responses.

Much emotion socialization research has focused on direct methods of socialization. The contingencies that have been examined in the emotion socialization literature (Klimes-Dougan et al., 2014; Magai, 1996) include rewarding responses (providing comfort and support), overriding responses (distracting child from emotionally provocative events), neglectful responses (ignoring the emotion), magnify responses (matching emotional expression of the child), and punishment responses (providing negative consequences). Emotion socialization responses observed within the discussion of emotions are often divided into two central categories of supportive or emotion coaching responses and unsupportive or emotion dismissing patterns (Gottman, Katz, & Hooven, 1996; Miller-Slough & Dunsmore, 2016). Discussions can also convey parental beliefs (meta-emotion philosophies) about emotions, which can either be supportive or unsupportive (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

When socialization behaviors (both direct and indirect) are supportive and nurturing, they are related to stronger social and emotional competencies, such as higher quality friendships, stronger emotional coping skills, and lower levels of social conflict (Brand & Klimes-Dougan, 2010; Eisenberg et al., 1998; Zeman et al., 2013). Supportive discussions of emotion entails emotion coaching in which discussions of emotions occur in ways that increase knowledge and understanding about emotions (Miller-Slough & Dunsmore, 2016). Parents who
frequently engage in emotion coaching view emotions as opportunities for learning and, as a result, children have better emotion regulation abilities (Morris et al., 2007). Supportive contingent responses include problem-focused responses, emotionally supportive responses, and distracting responses, which predict constructive emotion coping in children (Morris et al., 2007). Supportive modeling entails the range of emotional behaviors demonstrated by parents that youth learn through observational learning and social referencing, and is linked with children’s development of adaptive emotion regulation (Morris et al., 2007).

Unsupportive emotion socialization predicts emotional and behavioral dysregulation, higher levels of negative emotionality, and social dysfunction including high levels of social conflict (Eisenberg et al., 1998; Zeman, et al., 2013). Just as modeling of adaptive emotion regulation can lead to children’s development of emotion regulation through observational learning, modeling of maladaptive regulation predicts deficits in emotion regulation (Morris et al., 2007). In terms of discussions of emotions, emotion-dismissing responses result from parental discomfort with emotional expression, and do not predict the positive development of emotional competencies (Morris et al., 2007). Unsupportive contingencies, including punishing and ignoring responses, are linked to lower socio-emotional competencies and higher levels of negative emotions such as anger (Morris et al., 2007). Modeling of maladaptive emotion regulation and unsupportive contingencies have been linked to externalizing (i.e. Conduct Disorder, ADHD, aggression) and internalizing (i.e., depression and anxiety) symptoms in children and adolescents (Zeman et al., 2013).

Nearly all emotion socialization research has focused on parents as the primary socialization agent (Eisenberg et al., 1998; Zeman et al., 2013). However, other individuals, such as siblings, teachers, and friends, can also serve as emotion socialization agents.
**Peer emotion socialization.** Peer emotion socialization has received significantly less attention than parental socialization of emotion or peer socialization of behavior, but has been suggested as a potential factor explaining the contributions of peer influence on psychosocial outcomes in adolescence (Eisenberg et al., 1998; Klimes-Dougan, et al., 2014; Parr, Zeman, Braunstein, & Price, 2016; Zeman et al., 2013). Research suggests that similar patterns documented in parental emotion socialization may also apply in peer emotion socialization (Miller-Slough et al., 2016). As in the literature on parental emotion socialization, supportive emotion socialization by peers can lead to healthy emotional and behavioral development, and unsupportive emotion socialization is associated with symptoms of psychopathology (Klimes-Dougan, et al., 2014; Miller-Slough & Dunsmore, 2016). However, the literature on peer socialization of emotion is limited and conclusions must be made with caution.

In terms of indirect socialization, similar to parents, peer modeling of emotion expression can influence emotion regulation through imitation, contagion of negative affect, and observational learning (Eisenberg et al., 2009; Klimes-Dougan, et al., 2014; Miller-Slough & Dunsmore, 2016; Zeman et al., 2013). Limited research has examined this socialization process in peer contexts, but there exists preliminary evidence that peer modeling of maladaptive emotion regulation can predict maladaptive emotion regulation in adolescents (Miller-Slough et al., 2016). For example, Reindl, Gniewosz, and Reinders (2016) found that adolescents’ adaptive regulation of anger and fear (cognitive problem solving, distraction, etc.) predicted change in their best friends’ adaptive emotion regulation strategies over a one-year period. This change was inversely associated with the development of depression, such that adolescent modeling of adaptive regulation was associated with decreases in their best friend’s depressive symptoms.
There is more research on direct methods of peer socialization as opposed to indirect methods. One area that has been studied in depth is that of co-rumination, conversations in which youth repetitively discuss problems and rehash events that lead to negative emotions (Rose, 2002). Somewhat paradoxically, co-rumination has been linked with both internalizing symptoms and increased friendship quality in girls (Dishion & Tipsord, 2011; Hankin, Stone, & Wright, 2010; Rose, 2002). Specifically, co-rumination in friend dyads in middle school predicts the development of depression and anxiety symptoms in girls but not boys, and higher friendship quality in boys and girls (Rose et al., 2007). Another study (Borowski, Zeman, & Braunstein, 2018) found that co-rumination is related to lower emotional competence, specifically emotional awareness, for middle school age girls. Interestingly, for boys, co-rumination was associated with higher levels of emotion regulation coping. It is likely that co-rumination mediates peer contagion effects for depressive and anxious symptoms; that is, adolescents who have higher levels of internalizing symptoms are more likely to co-ruminate, which then predicts increases in their friends’ levels of internalizing symptoms (Schwartz-Mette & Rose, 2012).

Responses to emotional expression is also a focus of peer emotion socialization research. Some research has examined emotion-focused and problem-focused responses, comparable to the emotion coaching paradigm in parent research. In a sample of 132 middle school students, best friend dyads completed an interaction task in which youth discussed problems (Parr et al., 2016). Youths who provided either emotion-focused or problem-focused responses demonstrated lower levels of somatic symptoms, but there were no significant effects for the receipt of either emotion-focused or problem-focused responses.

Similar types of contingencies have been found in peer emotion socialization as in parent emotion socialization. These responses have been categorized as reflecting supportive or
unsupportive responses (Klimes-Dougan et al., 2014). Klimes-Dougan et al. (2014) adapted a parental measure of emotion socialization to be applicable to peer socialization, creating the You and Your Friends Questionnaire (YYF). Supportive responses to child’s expression of emotion include distracting (override category) and comforting (reward category) in ways that reduce distress. Unsupportive responses include dismissing (neglect category), punishing (relational and overt victimization categories), or amplifying (magnify category) responses that intensify negative emotionality and distress (Eisenberg et al., 1998; Klimes-Dougan et al., 2014). This is nearly the same as the parent emotion socialization categories, with the exception of the punish category that is reflected as relational and overt aggression categories, as peers do not have the same authority as parents to provide punishing responses. In adolescent friendships, supportive responses are more common than unsupportive responses with youths most frequently reporting their friends’ use of the supportive categories of reward and override (Klimes-Dougan et al., 2014). Magnify was reported to a moderate extent, and neglect, relational victimization, and overt victimization were rarely reported (Klimes-Dougan et al., 2014).

The few studies that have examined these patterns of contingencies in peer relationships demonstrate an association to psychological and behavioral outcomes (Klimes-Dougan et al., 2014; Miller-Slough & Dunsmore, 2016) These studies have all examined broadband measures of emotion socialization responses, rather than looking at responses to discrete emotions. In a study of middle school students, receipt of punishing responses was positively associated with somatic symptoms (Parr et al., 2016). In a sample of 101 middle-school age best friend dyads (Borowski et al., 2008), unsupportive responses to negative emotions (neglect and aggression) were linked to higher levels of social anxiety in boys; supportive responses were linked with lower levels of social anxiety for boys and girls. In a sample of adolescents 11 to 17 years old,
oversampled for internalizing and externalizing problems (Klimes-Dougan et al., 2014), emotion socialization contingencies predicted psychological outcomes. Primarily, receipt of unsupportive emotion socialization (victimization and neglect) was linked with increased, child-reported internalizing and externalizing problems both concurrently and longitudinally. In terms of supportive emotion socialization, reward was associated with decreased child-reported externalizing behavior over time, whereas override was associated with increased child-reported externalizing behavior over time (Klimes-Dougan et al., 2014). Associations between peer emotion socialization and parent-reported internalizing and externalizing problems were not significant. Although the majority of peer emotion socialization literature focuses on internalizing problems, this last study is the first to include the outcome of externalizing problems in peer emotion socialization research (Klimes-Dougan et al., 2014).

**Externalizing Behavior**

Externalizing behavior is a broad category of behavior problems, generally defined as patterns of behavior that have negative effects on others and on an individual’s environment (Liu, 2004; Lochman & Matthys, 2018). This category is generally subdivided into aggressive behavior and rule-breaking behavior (De Haan, Prinzie, & Dekovic, 2012). Sometimes, attention deficits and impulsivity are also included, but factor analyses have posited these symptoms as fundamentally different from aggression and rule-breaking (Cole & Zahn-Waxler, 1992; Mullin & Hinshaw, 2007). Though aggression, rule-breaking, and inattentiveness/impulsivity behaviors may appear similar, there are important differences in causes and trajectories. Inattentiveness and impulsivity have a strong biological basis, whereas aggressive and rule-breaking behaviors are more related to psychosocial risk factors (Mullin & Hinshaw, 2007). As such, this paper focuses on aggressive and delinquent aspects of externalizing behavior.
Aggressive behavior has been further divided into reactive and proactive aggression, as well as overt and relational aggression. Reactive aggression (also called hostile or retaliatory) occurs in response to some form of provocation or frustration, whereas proactive aggression (also called instrumental) occurs as a method to achieve a goal (Mullin & Hinshaw, 2007). Both reactive and proactive aggression can be either overt or relational. Overt/direct aggression can be physical (e.g., hitting, kicking) or verbal (e.g., saying mean things), whereas relational/indirect aggression is verbal and targeted at harming someone through relationships (e.g., gossiping, social exclusion (Mullin & Hinshaw, 2007). Rule-breaking behavior includes a wide range of problems, including noncompliance, opposition to rules and/or authority, substance abuse, and criminal activity such as theft. As children grow older, rule-breaking behavior can become delinquent behavior.

Although aggression and rule-breaking behavior are normative at low levels, externalizing behavior problems in youth that lead to significant distress or dysfunction are classified primarily as disruptive behavior disorders (Oppositional Defiant Disorder and Conduct Disorder) which both involve “hostile confrontation with others” (Cole & Zahn-Waxler, 1992, p. 174; Mullin & Hinshaw, 2007). Oppositional Defiant Disorder (ODD) is characterized by patterns of angry and irritable mood and defiant and argumentative behavior (American Psychological Association, 2013; Lochman & Matthys, 2018). Conduct Disorder (CD) consists of patterns of behavior that violate the rights of others (i.e., violence) (American Psychological Association, 2013; Lochman & Matthys, 2018). ODD is often considered a less extreme version of CD, with behavior problems escalating in the progression from ODD to CD (Dishion & Patterson, 2006; Mullin & Hinshaw, 2007).
Externalizing symptoms in adolescence. Adolescence is characterized by overall decreases in externalizing behavior (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Loeber & Hay, 1997; Nagin & Tremblay, 1999). However, there are differences in the developmental trajectories of aggression and rule-breaking, and examining broadband externalizing scales may neglect important differences in these trajectories (De Haan et al., 2012; Stanger, Achenbach, & Verhulst, 1997).

For most children, physical aggression is highest in early childhood and steadily decreases throughout middle childhood and adolescence (Dishion & Patterson, 2006; Stanger et al., 1997). Conversely, relational aggression tends to increase in adolescence (Ettekal & Ladd, 2017). It has been suggested that overall levels of aggression do not necessarily decrease, but become more sophisticated as aggressive children become more relational rather than physical to avoid detection and punishment (Ettekal & Ladd, 2017). However, when physically aggressive behavior does not decrease in adolescence, it has the potential to have more serious consequences. As adolescents grow stronger and potentially have access to weapons, aggression can turn to violence (Loeber & Hay, 1997). As this escalates, it becomes criminal behavior which, unlike aggression in childhood, can have legal consequences (Loeber & Hay, 1997).

Rule-breaking behavior follows a different trajectory. This behavior decreases throughout childhood, but tends to increase throughout adolescence (De Haan et al., 2012; Stanger et al., 1997). In early and middle childhood, rule-breaking largely consists of noncompliance and opposition (Dishion & Patterson, 2006). In adolescence, rule-breaking includes both noncompliance and opposition, but also delinquent behavior such as substance abuse (Dishion & Patterson, 2006). As these delinquent behaviors tend to increase throughout adolescence, even
patterns of severe rule-breaking that begin in adolescence and desist by early adulthood are relatively normative (Mullin & Hinshaw, 2007).

**Causes of externalizing behavior.** There are many models of the causes of externalizing behavior in youth, including ecological and emotional models (White & Renk, 2012).

**Social base.** As discussed in the previous section, peer groups and close friends have a large influence on the development of externalizing behavior problems, and association with deviant peers is one of the strongest predictors of youth externalizing behavior problems (Brechwald & Prinstein, 2011; Dishion & Patterson, 2006; Utržan et al., 2018). Through the socialization of behavior, primarily through deviancy training, friends influence the development, maintenance, and escalations of problem behaviors.

**Emotional base.** There is an increasing focus on the role of emotion in disruptive behavior disorders (Bookhout et al., 2018; Cavanagh, Quinn, Duncan, Graham, & Balbuena, 2017; Cole & Zahn-Waxler, 1992). While historically cited as a symptom of externalizing behavior, emotion dysregulation and reactivity, particularly dysregulation of anger, has recently been suggested as a core feature, rather than a symptom, of disruptive behavior disorders (Bookhout et al., 2018; Cavanagh et al., 2017; Cole & Zahn-Waxler, 1992; Loeber & Hay, 1997; Marcus, 2017; Mullin & Hinshaw, 2007; Perry, Calkins, Dollar, Keane, & Shanahan, 2017). Cole and Zahn-Waxler (1992) classify disruptive behavior disorders as affective disorders, and assert that the control of anger is central to externalizing behavior. Further, increases in self-regulation (including but not limited to emotion regulation) predict decreases in externalizing behavior from early childhood to mid-adolescence (Perry et al., 2017). Adaptive emotion regulation is associated with a decreasing trajectory of externalizing behavior, and is not associated with a high/stable trajectory of externalizing behavior adolescence (Perry et al., 2017).
Thus, it is likely that developing emotion regulation skills are one factor responsible for the normative decrease in externalizing behavior throughout childhood and adolescence.

There are distinctions in the way that emotion regulation is implicated in different subtypes of externalizing behaviors (Mullin & Hinshaw, 2007). Deficits in emotion regulation and high levels of emotional reactivity are more strongly linked to reactive aggression than to proactive aggression (Mullin & Hinshaw, 2007). One study (Hubbard et al., 2002) found that when children were put in frustrating situations, physiological indicators of heightened arousal and anger were present in children who engaged in reactive aggression, but not in proactive aggression. Additionally, emotion regulation plays a greater role in overt anti-social behavior than in rule-breaking behavior (covert anti-social behavior), which has not been linked with negative emotionality (Frick, O’Brien, Wootton, & McBurnett, 1994; Mullin & Hinshaw, 2007). It is possible that covert anti-social behavior (rule-breaking) is related to under-reactivity (callous and unemotional traits), as limited reactivity to punishment has also been linked with delinquent behavior (Mullin & Hinshaw, 2007).

**Socio-emotional influences.** Co-regulation and emotional socialization are significant influences on emotion regulation, and disruptions in these processes place children at risk for externalizing behavior (Bookhout et al., 2018). Bookhout et al. (2018) posit that while some aspects of emotional reactivity and aggression are biologically innate, especially in early childhood, the voluntary control of emotional reactivity that develops as children age is susceptible to social influences. A few studies have examined parental emotion socialization in relation to externalizing behavior and have found that parental emotion socialization is indirectly linked with youths’ externalizing behavior through youths’ emotion regulation (Ramsden & Hubbard, 2002). Despite the large body of literature implicating peers in externalizing behavior,
this research has been primarily focused on parents. One study to date (Klimes-Dougan et al., 2014) has examined the link between peer emotion socialization and externalizing behavior in adolescence, and found that supportive and unsupportive contingencies to negative emotions are associated with child-reported externalizing problems. More research in this area is needed, especially considering the vast body of literature demonstrating the prominence of peer influence on behavior problems in adolescence. As Dishion & Patterson (2006) note, peer relationships are both part of the problem and part of the solution. Future research should examine how supportive and unsupportive peer emotion socialization relates to the development of externalizing behavior problems in adolescence.

**Current Study**

This study addresses gaps in the literature on peer influence on externalizing behavior, specifically in relation to the role of friend emotion socialization. Using a longitudinal design, this study examined how best friends’ responses to their friends’ anger is related to aggressive behavior concurrently and four years later, and how regulation of anger may mediate this relation. Given the increasing influence of adolescent friendships on behavior, and the deepening, emotionally salient nature of these friendships, this study follows participants from approximately ages 13 to 17 years in order to understand the influences of one possible mechanism involved in adolescent friendships (i.e., anger socialization) on aggressive behavior. Participants reported on their best friends’ socialization responses, their own patterns of anger expression, and their own aggressive behavior. Parents completed an assessment of their child’s aggressive behavior at both time points.

This study contributes to existing literature in several ways. First, this study focuses on friend emotion socialization, a small but growing area of inquiry (Miller-Slough & Dunsmore,
2016). Though most emotion socialization research focuses on the role of parents, given that friendships become increasingly emotionally intimate in adolescence and that adolescents spend increasing amounts of time with peers, it is important to study how friends influence adolescent emotional expressivity (Klimes-Dougan, et al., 2014; Miller-Slough & Dunsmore, 2016).

Second, this study is one of a few to examine peer emotion socialization in relation to externalizing behavior. Although there is research linking peer behavior socialization with aggression (e.g., Dishion & Patterson, 2006), and emotion socialization with aggression (e.g. Ramsden & Hubbard, 2002), there is little research examining the relation between peer emotion socialization and aggression. To the author’s knowledge, only one other study examines peer emotion socialization and externalizing behavior of any kind (Klimes-Dougan et al., 2014).

Research that examines how peer emotion socialization predicts the development of aggressive behavior in adolescence over time is needed to understand whether the influence of peer emotion socialization has long-lasting effects. Understanding how enduring the effects are can help researchers when developing intervention and prevention studies.

Based on the emotion socialization theory and empirical literature, a set of hypotheses were developed:

1. **Unsupportive anger socialization responses.** Given the preliminary evidence of the influence of unsupportive peer emotion socialization on externalizing behavior problems (Klimes-Dougan et al., 2014), we predicted that the model for receipt and provision of unsupportive socialization to aggressive behavior through anger regulation coping would be significant cross-sectionally. Given that youth participated in best friend dyads, and that youth report receiving low levels of unsupportive emotion socialization from their close friends (Klimes-Dougan et al., 2014), we predicted that the providing unsupportive
responses to a friend’s anger expression may be related to maladaptive processes in the self, such as aggressive behavior against others.

a. *Type of reporter for concurrent aggression.* Given that adolescents are considered better reporters of their own emotions and behavior than parents (McConaughy & Achenbach, 1994), we predicted that stronger effects would be found for outcomes using child- versus parent-reported aggression outcomes in the cross-sectional analyses.

b. *Longitudinal analyses.* Given the varying trajectories of aggressive behavior in adolescence (Dishion & Patterson, 2006; Ettekal & Ladd, 2017; Stanger et al., 1997) and the dearth of longitudinal research on emotion processes in adolescence, we predicted that provision of unsupportive responses may not predict aggressive behavior four years later.

2. *Supportive anger socialization responses.* A limited body of research suggests that supportive peer emotion socialization is related to less externalizing behavior problems (Klimes-Dougan et al., 2014). As such, we hypothesized that youth who report that their best friend is supportive of their expressions of anger will have lower endorsement of aggressive behavior. Given the body of research linking emotion socialization with emotion regulation (Eisenberg, Cumberland, & Spinrad, 1998; Miller-Slough & Dunsmore, 2016; Zeman, Cassano, & Adrian, 2013), and emotion regulation with externalizing behavior, prosocial behavior, and social competence (Bookhout et al., 2018; Cavanagh et al., 2017; Eisenberg and Fabes, 1999), we predicted that this relation would be mediated by increased adaptive regulation of anger. However, we did not expect that youth’s supportive responses to their close friends’ anger expression would be related to
that youth’s aggressive behavior given that supportive responses within good friendship are typically the norm and likely do not affect a specific outcome such as aggressive behavior (Miller-Slough & Dunsmore, 2016).

a. *Type of reporter for concurrent aggression*. We predicted the same pattern of results as for the unsupportive response hypotheses for type of reporter.

b. *Longitudinal analyses*. The hypotheses examining longitudinal effects are exploratory. Although peers exert significant influence on many aspects of social and emotional development in adolescence (e.g., Dishion & Piehler, 2009), we predicted that any significant effects in the current study regarding supportive emotion socialization at T1 will weaken over the 4-year period and likely not reach significance.

**Method**

**Participants**

At Time 1 (T1), participants consisted of 202 middle school youths ($M_{age} = 12.68, SD = 1.01; 52.5\%$ girls) in 101 best friend dyads recruited from schools and community programs as part of a larger study. 171 parents (95.9\% mothers) participated with their children. Self-reported ethnicities included Caucasian (73.3\%), African-American (13.4\%), Hispanic (2.5\%), and Asian (1.5\%). Participants were primarily upper-middle class ($Hollingshead M = 48.80, SD = 10.47$).

At the second time point (T2) of the study, 169 youths participated, with a retention rate of 83.66\%. Participants participated an average of 23.54 ($SD = .50$) months later ($M_{age} = 14.70, SD = 1.05, 52.1\%$ girls). There was no difference in any variable measured at T1 in this study between youth who returned for T2 and those who did not.
At the third time point (T3) of the study, 121 youths participated, with a retention rate of 68.2% from T2 and 60% from T1. 118 parents participated with their children (87.6% mothers). Participants participated an average of 23.80 (SD = 3.673) months after T2 (Mage = 16.50, SD = 1.03, 54.2% girls). Adolescents who did not return for T3 were marginally more supportive of their friend’s anger at T1 (t(200) = -2.10, p = .06) and their parents reported marginally less T1 aggression (t(165) = 1.70, p = .07).

**Measures**

**Peer Emotion Socialization.** The 18-item You and Your Friends – Anger (YYF-A; Klimes-Dougan et al., 2014) questionnaire assesses youth’s perceptions of their friends’ supportive and unsupportive socialization responses to anger expression. This measure was completed at T1. Participants responded to the questionnaire thinking of their friend who was participating with them, and were asked to think about how this friend would act if he or she knew they were angry. As such, a participant’s score is representative of his or her perception of his or her friend’s anger socialization behavior. The participant responded to each item on a 5-point response scale (1 = *definitely would not do this*, 5 = *definitely would do this*). The YYF-A is divided into six subcategories. The Supportive category is comprised of three items from the Reward subscale (e.g., “Ask you about what has made you feel angry,” α = .73) and three items from the Override subscale (e.g., “Try to get you to do something else, to take your mind off feeling angry,” α = .71). Overall, the Supportive subscale consists of six items (α = .84). The Unsupportive subscale is made up of three items from the Neglect subscale (“Act like he/she doesn’t notice that you feel angry,” α = .74) and six items from the Victimization subscale (“Push you away or hit you,” α = .77). Overall, the Unsupportive subscale consists of nine items
(α = .80). This measure has been shown to have internally consistency, test-retest reliability and validity (Borowski et al., 2016; Klimes-Dougan et al., 2014).

**Emotion Regulation.** The Children’s Anger Management Scale (CAMS; Zeman, Shipman, & Penza-Clyve, 2001) measures different ways that children regulate their anger and was completed at T1 and T2. The two subscales of interest to this project were Regulation Coping and Dysregulation. The Regulation Coping subscale consists of four items and assesses adaptive expression of anger (e.g., “When I’m feeling mad, I control my temper,” T1: α = .75; T2: α = .65). The Dysregulated Expression subscale consists of three of items and assesses maladaptive, under-control of anger (e.g., “I do things like slam doors when I’m mad,” T1: α = .59; T2: α = .49). The participant responded to each item on a 3-point response scale (1 = hardly ever, 3 = often). The Regulation Coping and Dysregulated Expression subscales were strongly to moderately correlated (T1: r = -.57, p < .001; T2: r = -.32 p < .001), and thus, a combined Adaptive Expression scale was created by reverse-scoring the Dysregulated Anger Expression scale and combining it with the Anger Regulation Coping scale (T1: α = .79; T2: α = .65). This measure has demonstrated construct validity and test-retest reliability (Zeman et al., 2001).

**Externalizing Behavior.** The Bullying Behaviors subscale of the Kids in My Class at School questionnaire (Ladd, Kochenderfer, & Coleman, 1997) measures the frequency of children’s peer directed aggressive behavior at school, and was completed at T1. This subscale consists of four items (“Do you hit other kids in your class?”; α = .84). The participants responded to each item rated on a 5-point response scale (1 = never, to 5 = always). Ladd et al. (1997) demonstrated the subscale’s validity and internal reliability across diverse samples of youth.
The Youth Self Report - Aggression Subscale (YSR-A; Achenbach & Rescorla, 2001) and the Child Behavior Checklist - Aggression Subscale (CBCL-A; Achenbach, 1991), completed by youth and parents, respectively, assess the severity of children’s aggressive behavior. Youth completed the YSR-A at T3, and parents completed the CBCL-A at T1 and T3. The YSR-A consists of 17 items (“I am pretty mean to others”; “I get in many fights,” etc., \( \alpha = .803 \)). The CBCL-A consists of 18 items (“Cruelty, bullying, or meanness to others”; “physically attacks people,” etc., T1: \( \alpha = .78 \); T3: \( \alpha = .73 \)). Participants responded to each item rated on a 3-point response scale (0 = not true, to 2 = very true or often true). At T1, father-reported aggression was significantly higher than mother-reported aggression, \( t(165) = -2.96, p = .004 \). At T3, there were no significant differences in father- and mother-reported aggression, \( t(115) = -1.25, p = .21 \). These measures have demonstrated high internal consistency, test-retest reliability, and content, criterion-related, and construct validity in diverse samples of youth with and without psychological diagnoses (Achenbach & Rescorla, 2001).

Although completed by different reporters, the YSR – A and the CBCL - A are nearly identical, sharing 17 items, with one item unique to the CBCL-A (“sulks a lot”). These scales, based on norms, are moderately correlated (\( r = .52 \); Achenbach & Rescorla, 2001). In this sample, the T3 YSR-A and CBCL-A were moderately correlated (\( r = .36, p < .001 \)). Thus, we created a combined Aggression scale from the T3 child- and parent-reported data, with a total of 35 items (\( \alpha = .83 \)), in order to reduce the number of analyses that could inflate Type I error.

**Procedure**

**Time one.** Researchers obtained IRB approval, written consent from parents, and verbal assent from youth. Interviews were completed in the lab (32.7%), the participants’ home (60.5%), the library (1%), or in various other locations (5.9%). Youths participated in
reciprocated best friend pairs, with 80% of dyads consisting of reciprocated “very best” or “best” friends, and 98.6% of dyads consisting of reciprocated “very best,” “best,” or “good” friends. Upon arrival, friend dyads were separated and each adolescent was interviewed by a research assistant. All questions were read to the child, whose answer was recorded by the research assistants. While the children were being interviewed, parents completed questionnaires in a different room. The procedure took about an hour and children were compensated $10.

**Time two.** After two years had passed, participants’ parents were contacted and invited for follow-up interviews. Participants came alone, not in their best friend dyads. Interviews were completed in the lab (24.3%), the participants’ home (50.3%), the library (7.1%), over the telephone (13%), or in various other locations (5.3%). All questions were read to the child, whose answer was recorded by the research assistants. The procedure took about an hour and children were compensated $10 and parents received a $5 gift card to Starbucks.

**Time three.** After another two years had passed, participants’ parents were contacted and invited to participate in a final follow-up interview. Interviews were completed in the lab (25%), the participants’ home (41.7%), the library (6.7%), various other locations (8.3%), or over the telephone (18.3%). All questions were read to the child, whose answer was recorded by the research assistants. While the children were being interviewed, parents completed questionnaires in a different room. The procedure took about an hour. Children were compensated $15 and parents were compensated $10.

**Analytic Plan**

Data are analyzed using Actor-Partner Interdependence Mediation Modeling (Ledermann & Bodenmann, 2006; Ledermann & Kenny, 2017). Actor-Partner Interdependence Modeling assesses processes of influence within dyadic relationships while accounting for preexisting
similarity within dyads. This model produces partner and actor effects separately, which are computed while controlling for the other. Direct actor effects represent a relation between participants’ predictor variable and their own outcome variable; partner effects represent a relation between participants’ predictor variable and their dyad partners’ outcome variable. Similarly, in a mediation model, an actor-actor indirect effect represents a relation between participants’ predictor variable, their own mediator, then with their own outcome. A partner-actor indirect effect represents a relation between participants’ predictor variable, their dyad partner’s mediator, then the dyad partner’s outcome. Figure 1 outlines the possible effects.

All models were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Modeling (APIMeM) program. This online, publically accessible program, developed with R, uses structural equation modeling to compute both actor and partner indirect, direct, and total effects and uses the structural equation modeling program lavaan to estimate mediation models (Kenny, 2015; Kenny, Cashy, & Cook, 2006).

Six models were created. The first four models are cross-sectional using T1 data. These models examined T1 supportive and unsupportive socialization subscales, respectively, to predict concurrent aggressive behavior (separate for child-report and parent-report), mediated by concurrent adaptive expression of anger. The other two models were longitudinal and used supportive and unsupportive socialization, separately, to predict Time 3 aggression (combined child- and parent-report), mediated by Time 2 child-reported adaptive expression of anger.

**Results**

**Descriptive Statistics and Correlations**

See Tables 1 and 2 for descriptive statistics and correlations.

**Intra-Class Correlations (ICC)**
Intra-class correlations measure the similarity between partners in dyads. A significant ICC indicates that the principle of independence has been violated, and thus justifies the use of Actor-Partner Interdependence Modeling. Overall, there was a significant ICC for supportive anger socialization \((r = .28, p = .002)\). Next, ICCs were examined separately by child gender. For girls, there was a significant ICC for unsupportive anger socialization \((r = .30, p = .01)\) and a marginally significant ICC for T1 child-reported aggression \((r = .19, p = .09)\). For boys, there were marginally significant ICCs for T1 adaptive regulation of anger \((r = .23, p = .06)\) and T2 adaptive regulation of anger \((r = .27, p = .06)\). T3 aggressive behavior and T1 parent-reported aggression were the only variables with no significant ICC for either gender. See Table 3.

**Analyses of Unsupportive Friend Emotion Socialization Responses**

**Model 1: Concurrent child-reported outcomes analyses.** The mediation model was significant, \(\chi^2(2) = 13.22, p = .001\). Specifically, within this model, there was a direct actor effect \((b = .12, p < .001)\), such that friend A’s perceptions of Friend B’s unsupportive anger socialization responses predicted increased, concurrent, self-reported Friend A’s aggressive behavior. This effect was partially mediated by an actor-actor indirect effect \((b = .06, p = .002)\), such that Friend A’s perceptions of Friend B’s unsupportive anger socialization was indirectly associated with Friend A’s increased, concurrent self-reported aggression through Friend A’s reduced adaptive coping with anger. There was also a direct partner effect \((b = .08, p = .02)\), such that Friend A’s perceptions of Friend B’s unsupportive anger socialization was associated with Friend B’s increased, concurrent self-reported aggression. See Figure 1.

**Model 2: Concurrent parent-reported outcome analyses.** The mediation model was not significant, \(\chi^2(3) = .88, p = .83\). However, there was a direct partner effect \((b = .17, p = .01)\), indicating that Friend A’s perception of Friend’s B’s unsupportive anger socialization responses
was related to increased, concurrent, parent-reported Friend B’s aggression. There was also an actor effect to the mediator \( (b = -0.18, p < 0.001) \) such that Friend A’s perceptions of Friend B’s unsupportive anger socialization was associated with Friend A’s decreased adaptive coping with anger. See Figure 2.

**Model 3: Longitudinal combined parent-child reported outcome analyses.** The mediation model was significant, \( \chi^2(3) = 11.79, p = 0.01 \). There were no significant direct effects. There was a significant indirect partner-actor effect \( (b = 0.10, p = 0.02) \), such that Friend A’s perceptions of Friend B’s unsupportive anger socialization was indirectly associated with Friend B’s increased, combined parent-child reported aggression through reduced Friend B’s adaptive coping with anger. See Figure 3.

**Analyses of Supportive Friend Emotion Socialization Responses**

**Model 4: Concurrent child-reported outcomes analyses.** Overall, the mediation model was significant, \( \chi^2(2) = 12.09, p = 0.002 \). Specifically, within this model, there was a direct actor effect \( (b = -0.07, p = 0.04) \) such that Friend A’s perceptions of Friend B’s supportive anger socialization responses predicted decreases in concurrent, self-reported Friend A’s aggressive behavior. This was mediated by the actor-actor indirect effect \( (b = -0.06, p < 0.002) \), such that Friend A’s perceptions of Friend B’s supportive anger socialization was indirectly associated with decreased concurrent, Friend A’s self-reported aggression through increased Friend A’s adaptive coping with anger. See Figure 4.

**Model 5: Concurrent parent-reported outcomes analyses.** Overall, the mediation model was not significant, \( \chi^2 (3) = 0.79, p = 0.85 \). However, there was a marginally significant direct actor effect \( (b = -0.10, p = 0.10) \), such that Friend A’s perceptions of Friend B’s supportive anger socialization predicted decreased concurrent, self-reported Friend A’s aggressive behavior.
There was also an actor effect to the mediator ($b = .17, p < .001$) such that Friend A’s perceptions of Friend B’s supportive anger socialization was associated with Friend A’s increased adaptive coping with anger. See Figure 5.

Model 6: Longitudinal combined parent-child reported outcome analyses. Overall, the mediation model was not significant, $\chi^2(2) = 5.25, p = .07$. There was a significant actor effect from the mediator to the outcome ($b = -.77, p < .001$), such that Friend A’s adaptive coping with anger was associated with Friend A’s decreased aggressive behavior. See Figure 6.

Discussion

As the study of peer emotion socialization is a recent inclusion to the study of emotion socialization (Miller-Slough & Dunsmore, 2016), there is a gap in the literature examining the potential influence of peer emotion socialization on adolescent aggressive behavior. However, there is reason to believe that friend socialization of anger may play a role in the development of aggressive behavior given the initial findings on peer emotion socialization (Klimes-Dougan et al., 2014), the vast body of research examining peer influence on aggression (Dishion & Patterson, 2006; Vitaro et al., 2009), and research on the role of anger in aggression (Bookhout et al., 2018; Cavanagh et al., 2017; Cole & Zahn-Waxler, 1992). This study addresses the role of friend anger socialization in early-adolescent, same-sex, best friend dyads in aggressive behavior concurrently and four years later. The primary aim of this study was to assess how anger socialization by close friends directly predicts aggressive behavior. The secondary aim was to examine the role of anger regulation as a mediator between friend anger socialization and aggressive behavior.

Overall, the results from this study provide general support for the hypotheses that friend anger socialization is predictive of current aggressive behavior and the development of later
aggressive behavior. Specifically, providing unsupportive responses to a friend’s anger expression predicts more aggressive behavior in the self concurrently and later in adolescence, whereas receiving supportive responses from a friend to anger expression is linked with less aggressive behavior concurrently. Regulation of anger appears to play a mediating role in a subset of these relations.

**Unsupportive Socialization Findings**

The three models examining unsupportive socialization of anger provide a degree of consistency in the conclusion that youth’s unsupportive responses (i.e., socialization) to their friend’s expression of anger are linked with their own increased aggressive behavior, even accounting for the non-independence of friendships.

**Model 1:** Being unsupportive of a close friend’s expression of anger predicted increased, concurrent, child-reported aggression in the self. Perceived receipt of unsupportive friend anger socialization predicted increased, concurrent, child-reported aggression, mediated by decreased anger regulation.

**Model 2:** Being unsupportive of a close friend’s expression of anger predicts increased, concurrent, parent-reported aggression in the self.

**Model 3:** Being unsupportive of a close friend’s expression of anger predicts increased combined parent-child reported aggression four years later, mediated by decreased anger regulation.

First, in model 1, the results indicated that receipt of unsupported emotional socialization predicts increased aggressive behavior, which is consistent with the findings by Klimes-Dougan et al. (2014) that link the receipt of unsupportive peer emotion socialization and concurrent
externalizing behavior. The finding in our study did not hold for parent-reported aggression nor longitudinally.

There is little research on peer emotion socialization responses, as most research investigates parents as the emotion socialization agents (Eisenberg et al., 1998; Zeman et al., 2013). Further, existing research mostly focuses on receipt of peer socialization, rather than the provision of peer socialization (e.g., Eisenberg et al., 1998; Klimes-Dougan, et al., 2014). However, prior research has demonstrated that, in adolescence, providing unsupportive responses to friends’ emotional expressivity is linked with decreased social competence (Price, 2017). Specifically, providing unsupportive emotion socialization responses to friends was linked with increased overt victimization whereas providing supportive emotion socialization to peers was linked with increased friendship quality, decreased bullying, increased receipt of prosocial behavior, and decreased overt victimization (Price, 2017). In another line of research, decreased social competence has been linked with increased aggression (Mayberry & Espelage, 2007). Our findings indicate that, perhaps, the same children tend to both be unsupportive of their friends’ emotions and also more aggressive. That is, they do not appear to be able to respond neutrally or in a constructive way to their friend’s anger which may belie their own difficulties with regulating their own anger and aggression.

In Model 3, anger regulation mediated the relation between the provision of unsupportive emotion socialization and the development of aggression. There is little, if any, research on the role of emotion regulation in child emotion socialization behaviors, however there is a body of research that examines the role of parental emotion regulation in parental emotion socialization behaviors (Havighurst & Kehoe, 2017). Given that patterns of parental emotion socialization are thought to be similar to patterns of peer socialization (Miller-Slough & Dunsmore, 2016), our
findings are consistent with the parent socialization literature. That is, the provision of unsupportive socialization responses by friends is predictive of lower anger regulation abilities, which predicts increased aggressive behavior in those friends. It is also possible that youth who provide unsupportive responses to their friends’ anger, and are unable to calm their friends down, end up “catching” the anger through a contagion effect (Kelly, Iannone, & McCarty, 2016) and demonstrate more aggression. Perhaps dyads characterized by high unsupportive anger socialization responses amplify maladaptive ways of coping with anger which subsequently lead to more aggressive behavior. This finding is particularly notable given the longitudinal nature of the findings which indicates an increase in aggressive behavior four years after the collection of the emotion socialization data and two years after the assessment of anger regulation.

It also may be that the significance of findings is due, in part, to measurement issues. The findings linking provision of unsupportive responses and aggression may result from similarity in the assessment of aggression and unsupportive emotion socialization. The three scales that comprise the unsupportive emotion socialization category of the You and Your Friends – Anger (YYF-A) are neglect, overt victimization, and relational victimization (Klimes-Dougan et al., 2014). The overt victimization (e.g., “Push you away or hit you”) and relational victimization (e.g., “Leave you out of the group or any activities for a while”) scales are moderately correlated ($r = .40, p < .001$). As Friend A’s YYF-Anger score corresponds to Friend B’s behavior, Friend A’s victimization score measures Friend B’s aggressive behavior. Thus, behaving aggressively toward a friend in response to his or her expression of anger would be counted as provision of unsupportive emotion socialization. In terms of our findings, perhaps, one way that aggression manifests in adolescence is as unsupportive emotion socialization responses to others in close relationships. However, the unsupportive socialization scale also included the neglect items
which includes items reflective of ignoring anger expression, which was significantly correlated with the combined victimization scale \( r = .48, p < .001 \).

Overall, these findings primarily indicate that youth’s unsupportive emotion socialization behavior to their friend is linked with their own increased aggressive behavior as assessed by self-report, parent-report, and a combined self-and parent-report. This consistency in findings across time points and across reporter provides a measure of confidence in the validity of this finding. Given that youth with anti-social behavior and low social competence tend to aggregate in friendships (e.g., Güroğlu, Cillessen, Haselager, & van Lieshout, 2012), dyads characterized by high levels of unsupportive socialization may have lower levels, in general, of emotional competence. These results provide support for two possible conclusions: 1) low levels of emotional competence account for an individual’s high level of unsupportive socialization, low levels of adaptive coping with anger, and high levels of aggression, and 2) adolescents who are unsupportive of their friends’ anger may feed into a cycle of escalating anger dysregulation and aggression.

**Supportive Socialization Findings**

Overall, two of three supportive emotion socialization models yielded significant findings. Specifically, these models indicate that receipt of supportive responses to anger expression, including responses such as validation and distraction, from a close friend is associated with decreased aggression concurrently as reported by both self- and parent-report. These findings did not hold across time, however.

**Model 4:** Perceived receipt of supportive friend anger socialization predicts less concurrent, child-reported aggression, mediated by increased anger regulation.
Model 5: Perceived receipt of supportive friend anger socialization responses predicts less concurrent, parent-reported aggression.

Model 6: There were no significant effects predicting combined parent-child reported aggression four years later.

Overall, this set of findings contributes to two central existing lines of research examining social influence on aggressive behavior.

First, the finding linking the receipt of supportive anger socialization with aggressive behavior is supported by the body of literature that studies peer influence on aggression and other anti-social behavior. It is well established that peers are a strong influence on the development and maintenance of behavior problems throughout adolescence (Brechwald & Prinstein, 2011; Dishion & Tipsord, 2011; Vitaro et al., 2009). The four main mechanisms of peer influence on behavior, as outlined by Brechwald and Prinstein (2011) include imitating “high-status” peers, attempting to match or deviate from social norms, engaging in behavior associated with a particular self-identity, and increasing or decreasing behavior as a result of behavioral reinforcement and punishment. However, emotional mechanisms in peer influence have been neglected. The findings from our study suggest that emotion socialization may be an additional method of peer influence that both increases and reduces maladaptive peer behavior.

Second, our results from the supportive socialization responses dovetail findings from the field of parental emotion socialization that has demonstrated the relation between supportive parental emotion socialization and less externalizing behavior (e.g., Zeman et al., 2013). This literature indicates that responses to an adolescent’s anger expression is a mechanism that can influence the emergence and development of behavior problems (Eisenberg et al., 1998). As mentioned, patterns of parental emotion socialization are thought to be similar to patterns of peer
socialization (Miller-Slough & Dunsmore, 2016), and thus, existing literature supports the idea that peer emotion socialization might predict aggressive behavior. In a more direct comparison that used the same measure of peer emotion socialization as our study, Klimes-Dougan and colleagues (2014) found longitudinal links between receipt of reward responses (e.g., “Ask you about what has made you feel angry/sad/worried”) and decreased externalizing behavior, and between receipt of override responses (e.g., “Ask you to do something else to take your mind off feeling angry/sad/worried”) and increased externalizing behavior. In our study, reward and override were combined to form the supportive emotion socialization scale, as they are highly correlated ($r = .58$, $p < .001$), which together predicted less aggression. This difference in directionality may be due to our focus on just anger, and Klimes-Dougan et al.’s variable that combined anger, sadness, and worry. This suggests that the socialization of discrete emotions has specific implications for different outcomes (Zeman et al., 2010; Zeman & Garber, 1996). Although overriding responses to worry and sadness may be linked with more externalizing behavior because distraction may seem invalidating, overriding responses to anger that distract an individual from his or her anger arousal might lead specifically to less externalizing behavior. This suggests that socialization responses typically described as supportive, such as override, may not be universally supportive across discrete emotions.

Models 1 and 4, the concurrent, child-reported models for unsupportive and supportive emotion socialization, respectively, yielded significant mediation models such that anger regulation mediated the relation between receipt of socialization and aggression. Given that there is little research examining peer emotion socialization, there is little research examining emotion regulation as a mediator between receipt of this socialization and outcomes. However, there is significant evidence linking parental emotion socialization with child emotion regulation, and
their relations to both general outcomes and the specific outcomes of externalizing behavior (Ramsden & Hubbard, 2002). Given that there is significant evidence that emotion regulation is a contributing factor in aggressive behavior (Bookhout et al., 2018), existing evidence supports our findings that anger regulation accounts for the link between emotion socialization and aggression.

In sum, the findings from our study indicate that adolescents’ receipt of supportive responses (i.e., validation and distraction) to anger may serve as a protective factor against concurrent aggressive behavior. This finding provides one specific mechanism through which close friends may be able to promote healthy development in adolescence. Best friend dyads are an important social context in which, when characterized by supportive anger socialization, adolescents can refine emotional skills that protect against the display and exacerbation of aggressive behavior. More generally, these findings provide support for the theories that emotion socialization does continue to exert an influence on emotional and psychological development past early childhood, and that individuals other than parents, such as friends, can serve as the socializing agents (Eisenberg et al., 1998; Vitaro et al., 2009; Zeman, et al., 2013).

**Limitations/Future Directions**

There are several strengths to the current study. First, our use of multiple reporters counteracts the negative effects of self-report data and same-reporter bias, and thus provides validity to findings that were consistent across reporters. Next, our dyadic structure adds analytical strength, as we were able to examine the dyadic process of emotion socialization using methodology specifically designed to understand the reciprocal influences and non-independence of dyadic data. Third, there are very few longitudinal studies that have examined peer socialization of emotion particularly across early to middle adolescence, a developmental period
in which significant changes in social relationships are occurring. Lastly, our sample of 202 participants, nested within 101 dyads, had a relatively strong retention rate across four years which provides strength to the developmental nature of our study.

Despite these strengths, there are several limitations to note. One limitation concerns the homogeneity of our sample, particularly in regards to culture, clinical presentation, and friendship quality that limits generalizability of the findings. In terms of demographics, our sample was predominantly White, middle-class youth from the southeastern United States. There are well-demonstrated cultural differences in the presentation (Morelen, Zeman, Anderson, & Perry-Parrish, 2012; von Salisch & Saarni, 2011) and socialization (Cole, Tamang, & Shrestha, 2006) of anger in childhood. Thus, the emotion socialization processes we observed might differ across diverse cultural settings. Patterns that are considered supportive or unsupportive in Western culture might not be the same in others, and thus, they might relate differently to maladaptive outcomes. Future research should examine how socialization processes related to anger and aggression differ in societies and cultures with different norms for anger and aggression.

Next, we used a community sample of adolescents with very few youth scoring in the clinical range for aggressive behavior. Future research should examine these socialization mechanisms in a sample of children who demonstrate a wider range of aggression, including children with clinically significant levels of aggression. This increased variability in aggression could lead to more nuanced findings regarding the relation between emotion socialization and aggression. Next, there are implications to note that arise from the dyadic nature of the study. As youth could only participate in the study along with a reciprocated best friend, every participant had at least a minimal level of social competence. As social competence is associated with
increased emotion regulation and decreased aggression (Calkins et al., 2011; Mayberry et al., 2007), it is possible that our sample had a low level of maladaptive behavior. Additionally, adolescents have reported receiving low levels of unsupportive emotion socialization from their close friends (Klimes-Dougan et al., 2014). Thus, the low variance in our sample for unsupportive emotion socialization resulting from our best friend dyads could be obscuring potential effects of unsupportive emotion socialization. Peer emotion socialization should be studied in diverse populations of adolescents in order to provide broader generalizability of these findings.

There were also limitations related to methodology. One significant limitation is the lack of behavioral data to evaluate aggressive behavior and socialization responses. The use of behavioral measures of emotion socialization, emotion regulation, and aggression would strengthen these findings. Similarly, our measure of peer socialization of anger centered on a hypothetical situation involving the participant experiencing something “unfair and annoying.” This creates a sense of justifiable anger, which may elicit specific socialization responses than would anger viewed as less valid. Thus, this measure is not representative of all peer anger socialization experiences. Additionally, though gender plays a role in aggression (Estévez, Povedano, Jiménez, & Musitu, 2014; Smith, Rose, & Schwartz-Mette, 2010), anger socialization (Zeman et al., 2010), and anger expression (Chaplin & Aldao, 2013), we did not examine gender due to the complexity of the Actor Partner Interdependence Mediation Model. Adding gender as a moderator was outside the scope of the project and would have also required a larger sample size to adequately power the analyses.

Future research could focus on mechanisms and outcomes of peer emotion socialization responses in settings that congregate youth with behavior disorders, such as group therapy,
special education programs, and residential treatment centers. Dishion & Pielhér (2009) first identified how processes of deviancy training (i.e., socialization of behavior) in group treatment settings can lead to escalation of the problems targeted by the intervention. Research should examine if emotion socialization can mitigate or escalate behavior problems in treatment settings in a way similar to deviancy training. Next, there are implications for intervention research. There is initial evidence that interventions designed to increase social competence among peers can predict decreases in aggressive behavior (Frey, Hirschstein, & Guzzo, 2000). Furthering this research, similar to interventions designed to promote positive parenting through supportive emotion socialization (e.g., Wilson, Havighurst, & Harley, 2012), interventions could aim to increase supportive peer emotion socialization and decrease unsupportive peer emotion socialization. Future research should examine peer socialization in treatment settings in order to understand and eventually mitigate the negative effects of congregating children with problem behavior.

Conclusions. This study builds upon and extends our knowledge of peer influences on behavior by integrating theories from the field of emotion socialization and the field of deviancy training. Emotion socialization within best friendships exerts an influence on emotional and behavioral development throughout adolescence. When unsupportive to expressions of anger, best friendships can escalate maladaptive patterns of anger regulation and aggression that persist throughout adolescence. When supportive to anger expression, best friendships provide a constructive environment for adolescents to refine their expression and regulation of anger in adaptive ways that can then protect against concurrent behavior problems. These findings emphasize the importance of anger socialization in processes of friend influence on externalizing behavior in adolescence.
References


### Table 1

Correlations among Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>1. Gender (0 = female, 1 = male)</td>
<td>—</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. T1 Age</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. T2 Age</td>
<td>.10</td>
<td>.92**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. T3 Age</td>
<td>-.07</td>
<td>.92**</td>
<td>-.96**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Supportive Anger Socialization</td>
<td>-.30**</td>
<td>-.01</td>
<td>.07</td>
<td>-.04</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. Unsupportive Anger Socialization</td>
<td>.17*</td>
<td>-.01</td>
<td>.00</td>
<td>.03</td>
<td>-.51**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. T1 Adaptive Anger Coping</td>
<td>-.06</td>
<td>-.05</td>
<td>-.08</td>
<td>.03</td>
<td>.23**</td>
<td>-.25**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. T2 Adaptive Anger Coping</td>
<td>-.08</td>
<td>-.00</td>
<td>-.00</td>
<td>.14</td>
<td>.16*</td>
<td>-.13^</td>
<td>.54**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. T1 Child-Reported Aggression</td>
<td>.21**</td>
<td>.16*</td>
<td>.21**</td>
<td>.01</td>
<td>-.25**</td>
<td>.33**</td>
<td>-.44**</td>
<td>-.38**</td>
<td>—</td>
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</tr>
<tr>
<td>10. T1 Parent-Reported Aggression</td>
<td>.01</td>
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<td>-.00</td>
<td>-.05</td>
<td>-.12</td>
<td>.71</td>
<td>-.05</td>
<td>-.18*</td>
<td>.09</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>11. T3 Aggression</td>
<td>.09</td>
<td>-.01</td>
<td>-.06</td>
<td>-.06</td>
<td>-.12</td>
<td>.10</td>
<td>-.18^</td>
<td>-.34**</td>
<td>.13</td>
<td>.44**</td>
<td>—</td>
</tr>
</tbody>
</table>

*Note. ^p < .10, *p < .05, **p < .01, ***p < .001.*
Table 2

*Means, Standard Deviations, and Range of Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender (0 = female, 1 = male)</td>
<td>.48</td>
<td>.5</td>
<td>0-1</td>
</tr>
<tr>
<td>2. T1 Age (in months)</td>
<td>152.16</td>
<td>12.15</td>
<td>124-191</td>
</tr>
<tr>
<td>3. T2 Age (in months)</td>
<td>176.44</td>
<td>12.64</td>
<td>146-217</td>
</tr>
<tr>
<td>4. T3 Age (in months)</td>
<td>198.03</td>
<td>12.30</td>
<td>168-230</td>
</tr>
<tr>
<td>5. Supportive Anger Socialization</td>
<td>22.02</td>
<td>4.42</td>
<td>6-30</td>
</tr>
<tr>
<td>7. T1 Adaptive Anger Coping</td>
<td>16.61</td>
<td>3.02</td>
<td>7-21</td>
</tr>
<tr>
<td>8. T2 Adaptive Anger Coping</td>
<td>17.30</td>
<td>2.51</td>
<td>9-21</td>
</tr>
<tr>
<td>9. T1 Child-Reported Aggression</td>
<td>5.94</td>
<td>2.34</td>
<td>4-20</td>
</tr>
<tr>
<td>10. T1 Parent-Reported Aggression</td>
<td>2.95</td>
<td>3.02</td>
<td>0-14</td>
</tr>
<tr>
<td>11. T3 Aggression</td>
<td>8.58</td>
<td>5.49</td>
<td>0-26</td>
</tr>
</tbody>
</table>
### Table 3

**Intraclass Correlations**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Socialization</td>
<td>.28**</td>
<td>.21^</td>
<td>.20^</td>
</tr>
<tr>
<td>Unsupportive Socialization</td>
<td>.09</td>
<td>.31*</td>
<td>-.08</td>
</tr>
<tr>
<td>T1 Anger Regulation</td>
<td>-.03</td>
<td>-.30</td>
<td>.23^</td>
</tr>
<tr>
<td>T2 Anger Regulation</td>
<td>.13</td>
<td>-.07</td>
<td>.27^</td>
</tr>
<tr>
<td>T1 Child-Reported Aggression</td>
<td>.09</td>
<td>.19^</td>
<td>-.03</td>
</tr>
<tr>
<td>T1 Parent-Reported Aggression</td>
<td>.12</td>
<td>.06</td>
<td>.22</td>
</tr>
<tr>
<td>T3 Aggression (combined)</td>
<td>.02</td>
<td>-.04</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note.* ^p < .10, *p < .05, **p < .01
Peer Emotion Socialization and Aggressive Behavior

Table 4

*Model 1: Unsupportive Anger Socialization Predicting T1 Child-Reported Aggression*

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor Direct</td>
<td>0.122</td>
<td>&lt; .01</td>
<td>[0.053, 0.191]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
<td>0.055</td>
<td>&lt; .01</td>
<td>[0.024, 0.091]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>0</td>
<td>0.91</td>
<td>[-0.007, 0.005]</td>
</tr>
<tr>
<td>Partner Direct</td>
<td>0.079</td>
<td>0.02</td>
<td>[0.010, 0.149]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
<td>0.002</td>
<td>0.80</td>
<td>[-0.018, 0.021]</td>
</tr>
<tr>
<td>Partner-Actor Indirect</td>
<td>-0.002</td>
<td>0.90</td>
<td>[-0.033, 0.027]</td>
</tr>
</tbody>
</table>

*Note.* All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model. CI = confidence interval. All significant values are bolded.
Table 5

*Model 2: Unsupportive Anger Socialization Predicting T1 Parent-Reported Aggression*

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-.052</td>
<td>.36</td>
<td>[-.164, .060]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
<td>.014</td>
<td>.36</td>
<td>[-.004, .034]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>0</td>
<td>.90</td>
<td>[-.007, .005]</td>
</tr>
<tr>
<td>Partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>.167</td>
<td>&gt; .01</td>
<td>[.043, .291]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
<td>.003</td>
<td>.85</td>
<td>[-.017, .022]</td>
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<tr>
<td>Partner-Actor Indirect</td>
<td>-.001</td>
<td>.87</td>
<td>[-.012, .008]</td>
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</table>

*Note.* All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model (2015). CI = confidence interval. All significant values are bolded.
Table 6

*Model 3: Unsupportive Anger Socialization Predicting T3 Aggression*

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>.049</td>
<td>.69</td>
<td>[-.190, .289]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
<td>.041</td>
<td>.22</td>
<td>[-.021, .103]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>-.021</td>
<td>.51</td>
<td>[-.041, -.005]</td>
</tr>
<tr>
<td><strong>Partner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>.154</td>
<td>.17</td>
<td>[-.064, .371]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
<td>-.009</td>
<td>.54</td>
<td>[-.026, .004]</td>
</tr>
<tr>
<td>Partner-Actor Indirect</td>
<td><strong>.096</strong></td>
<td><strong>.02</strong></td>
<td><strong>[.036, .158]</strong></td>
</tr>
</tbody>
</table>

*Note.* All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model. CI = confidence interval. All significant values are bolded.
Table 7

Model 4: Supportive Anger Socialization Predicting T1 Child-Reported Aggression

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-.071</td>
<td>.04</td>
<td>[-.14, -.002]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
<td>-.055</td>
<td>&gt;.01</td>
<td>[-.099, -.021]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>.002</td>
<td>.56</td>
<td>[-.007, .010]</td>
</tr>
<tr>
<td><strong>Partner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-.041</td>
<td>.25</td>
<td>[-.110, .028]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
<td>-.006</td>
<td>.52</td>
<td>[-.028, .009]</td>
</tr>
<tr>
<td>Partner-Actor Indirect</td>
<td>.021</td>
<td>.19</td>
<td>[-.010, .050]</td>
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</table>

*Note. All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model (2015). CI = confidence interval. All significant values are bolded.*
Table 8

*Model 5: Supportive Anger Socialization Predicting T1 Parent-Reported Aggression*

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-.097</td>
<td>.10</td>
<td>[-.212, .018]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
<td>-.006</td>
<td>.69</td>
<td>[-.028, .009]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>.005</td>
<td>.48</td>
<td>[-.004, .014]</td>
</tr>
<tr>
<td><strong>Partner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>.010</td>
<td>.87</td>
<td>[-.105, .125]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
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<td>.43</td>
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<tr>
<td>Partner-Actor Indirect</td>
<td>.002</td>
<td>.70</td>
<td>[-.007, .010]</td>
</tr>
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</table>

*Note.* All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model (2015). CI = confidence interval. All significant values are bolded.
### Model 6: Supportive Anger Socialization Predicting T3 Aggression

<table>
<thead>
<tr>
<th>Effects</th>
<th>Estimate</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>.030</td>
<td>.79</td>
<td>[-.192, .252]</td>
</tr>
<tr>
<td>Actor-Actor Indirect</td>
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<td>.16</td>
<td>[-.126, .016]</td>
</tr>
<tr>
<td>Partner-Partner Indirect</td>
<td>.007</td>
<td>.60</td>
<td>[-.004, .019]</td>
</tr>
<tr>
<td>Partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-.081</td>
<td>.53</td>
<td>[-.329, .168]</td>
</tr>
<tr>
<td>Actor-Partner Indirect</td>
<td>.008</td>
<td>.60</td>
<td>[-.003, .021]</td>
</tr>
<tr>
<td>Partner-Actor Indirect</td>
<td>-.046</td>
<td>.21</td>
<td>[-.119, .022]</td>
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</tbody>
</table>

*Note. All values were computed using David Kenny’s (2015) Actor-Partner Interdependence Mediation Model (2015). CI = confidence interval. All significant values are bolded.*
Figure 1. Conceptual diagram of the Actor-Partner Interdependence Mediation Model
Figure 2. Model 1: Unsupportive Socialization and Concurrent, Child-Reported Aggression

Note. * $p \leq .05$; *** $p \leq .01$; **** $p \leq .001$
Figure 3. Model 2: Unsupportive Socialization and Concurrent, Parent-Reported Aggression

Note. ** $p \leq .01$; *** $p \leq .001$
Figure 4. Model 3: Unsupportive Socialization and Longitudinal Aggression

Note. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$
Figure 5. Model 4: Supportive Socialization and Concurrent, Child-Reported Aggression

Note. * p ≤ .05; ** p ≤ .01; *** p ≤ .001
Figure 6. Model 5: Supportive Socialization and Concurrent, Parent-Reported Aggression

Note. ^ p ≤ .1; *** ≤ p .001
Figure 7. Model 6: Supportive Socialization and Longitudinal Aggression

Note. *** $p \leq .001$
Appendix
1. Child assent script
2. You and Your Friends – Anger Questionnaire
3. Children’s Anger Management Scale
4. Kids in my Class at School – Aggression Questionnaire
5. Youth Self Report – Aggression
6. Child Behavior Checklist – Aggression
Adolescent Assent Script

“Thank you for your interest in our project. I am going to tell you a little bit about the project we are doing and ask that you help us out with it.

Your participation in this project is your choice. Even though your parents have given you permission to help us out, you can still choose not to participate. If you decide to participate, you can stop at any time without any consequences.

If you agree to help us out, we will ask you some questions about your feelings and experiences with friends. We will also have you and your friend do a task together that will involve talking to each other about a problem you pick to discuss. We will be asking you these questions and having you do this task so we can learn more about children’s feelings and their friendships. We will read all the directions and questions to you. You will tell us your answers and we will write them down for you. Please answer each question as truthfully as possible. Remember that there are no right or wrong answers. If you do not want to answer a question because it makes you feel uncomfortable, please tell me and you may skip it. Your answers and your friends’ answers to the questions today are personal and private. Please do not talk about your answers with your friend or ask your friend about his or her answers when we are finished. If you have a question or feel confused at any point, feel free to stop and ask.

All of your answers will be private which means that they will not be shared with anyone unless you tell us you are feeling really bad. If you do tell us this, then we will let a parent know so that someone can help you feel better. Your name will not be on your paper, and we will be the only ones to will see your answers.”
### CAMS (S)

**Instructions:** Please circle the response that best describes your behavior when you are feeling **mad**.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I am feeling mad, I control my temper.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. I hold my anger in.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. I stay calm and keep my cool when I am feeling mad.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. I do things like slam doors when I am mad.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. I hide my anger.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. I attack whatever it is that makes me mad.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. I get mad inside but I don’t show it.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. I can stop myself from losing my temper.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. I say mean things to others when I am mad.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. I try to calmly deal with what is making me feel mad.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. I’m afraid to show my anger.</td>
<td>Hardly-Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
YYF: A
You just found out about something really unfair and annoying that was done to you, and that has made you angry. You are with your friend and you feel really, really angry.
Think about what your friend would do in this situation if he/she KNEW that you really felt angry. Rate how likely he/she would be to do each of the things on the list. Do you think HE/SHE:

<table>
<thead>
<tr>
<th>Definitely would not do this</th>
<th>Would do this about HALF the time</th>
<th>Definitely WOULD do this</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1.) ____________Say something like “Cheer up!”
2.) ____________Say something like “You’re being ridiculous,” or “You’re stupid.”
3.) ____________Act like he/she doesn’t notice that you feel angry.
4.) ____________Help you to deal with what’s made you feel angry.
5.) ____________Get angry too.
6.) ____________Say that they’ll stop liking you if you don’t change your attitude.
7.) ____________Not say or do anything about it.
8.) ____________Push you away or hit you.
9.) ____________Try to get you to do something else, to take your mind off feeling angry.
10.) ____________Ask you about what has made you feel angry.
11.) ____________Tell you that you have a good reason to feel really angry.
12.) ____________Tell you that things aren’t so bad.
13.) ____________Tell other people secrets or mean things about you.
14.) ____________Ignore the fact that you feel angry.
15.) ____________Say something like “It’s okay, we all feel angry sometimes.”
16.) ____________Get upset at what’s going on.
17.) ____________Say that he/she doesn’t like it when you act this way.
18.) ____________Leave you out of the group or any activities for a while.
**KIMC**

<table>
<thead>
<tr>
<th>Do you:</th>
<th>Never</th>
<th>Hardly ever</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pick on other kids in your class at school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Say mean things to other kids in your class at school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Say bad things about other kids in your class at school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Hit other kids in your class at school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Statement</td>
<td>Not True</td>
<td>Somewhat or Sometimes True</td>
<td>Very True or Often True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I argue a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am pretty mean to others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I try to get a lot of attention</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I destroy my own things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I destroy things belonging to others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I disobey my parents</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I disobey at school</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get in many fights</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I physically attack people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I scream a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am stubborn</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My mood or feelings change suddenly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am suspicious</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tease others a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a hot temper</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I threaten to hurt people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am louder than other kids</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Child Behavior Checklist - Aggression

Below is a list of items that describe children and youths. For each item that describes your child now or within the past 6 months, please circle the 2 if the item is very true or often true of your child. Circle the 1 if it is somewhat or sometimes true of your child. If the item is not true of your child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

***************************************************************************

Argues a lot................................................................. 0 1 2
Cruelty, bullying, or meanness to others.......................... 0 1 2
Demands a lot of attention.............................................. 0 1 2
Destroys his/her own things............................................. 0 1 2
Destroys things belonging to his/her family or others........ 0 1 2
Disobedient at home...................................................... 0 1 2
Disobedient at school..................................................... 0 1 2
Gets in many fights...................................................... 0 1 2
Physically attacks people.............................................. 0 1 2
Screams a lot.................................................................. 0 1 2
Stubborn, sullen, or irritable......................................... 0 1 2
Sudden changes in mood or feelings.................................. 0 1 2
Sulks a lot...................................................................... 0 1 2
Suspicious...................................................................... 0 1 2
Teases a lot..................................................................... 0 1 2
Temper tantrums or hot temper...................................... 0 1 2
Threatens people........................................................... 0 1 2
Unusually loud.............................................................. 0 1 2