

COMMENTARIES: Relationships as Inputs and Outputs of Emotion Regulation

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The three target articles presented in this issue add to a growing body of literature in social psychology that focuses on the "executive function" of the self (Baumeister, 1998). That is, in these target articles the self is viewed as a regulator of mood or emotion. This perspective expands on the relationship between emotion and self-regulation by identifying emotion as not only a by-product of self-control (Carver & Scheier, 1990) but also as an explicit object of self-regulation. Tice and Bratslasky (this issue) note that certain executive functions of the self with respect to emotion are similar to those in other domains of self-control. For instance, they note that individuals hold standards for appropriate emotional expression, monitor their actions with respect to their emotions, and assert control to obtain long-term goals. In his target article, Larsen (this issue) also shows that how the self functions as a controller in the emotional domain is similar to other control processes. He applies a general cybernetic control model to mood. According to this model an individual's current mood is compared to a desired mood state making mood the object of self-regulation. When discrepancies between the current mood and the desired mood are detected the self acts in its executive function capacity to invoke regulatory mechanisms intended to effect changes in the situation. Erber and Erber (this issue) present empirical data that document that individuals' use of regulatory mechanisms is dependent on their appraisals of the social constraints in a given situation. In their target article, the Erbers give concrete examples of the self as a regulator of mood highlighting the executive function of the self with respect to emotion.

Whereas collectively these target articles stress the executive function of the self with respect to emotion, they also make assumptions about the interpersonal antecedents and consequences of emotion regulation. Because we feel that relationships provide a context that is definitely implicated in a science of mood regulation, in this commentary we emphasize and expand on the role of relationships in emotion regulation. Aspects of all three target articles point to the ties between emotion regulation and relationships. Erber and Erber focus on the effects of specific types of others in moderating mood control motives. Whereas the Erbers note that some of the individual differences that determine individuals' regulatory strategies may not be social, many behavioral traits, and beliefs and cognitions that are related to an individuals' regulatory styles are associated with family relationships (Calkins, 1994). Furthermore, many of Larsen's six potential mechanisms of individual differences may have been influenced by individuals' experiences with their caregivers. Cassidy's (1994) review, for instance, suggests that individuals' internal working models of their attachment relationships relate to their attention to

affect (Larsen, Box 1), use of regulation mechanisms (Larsen, Box 2), perception of current affective states (Larsen, Box 4), discrepancy sensitivity (Larsen, Box 5), and beliefs about the optimal affective state (Larsen, Box 6). Finally, individuals' tendencies to underregulate or misregulate their emotion (Tice & Bratslavy, this issue) may also be influenced by relationship contexts and ultimately influence relationship outcomes.

We are inspired by these target articles to share our thoughts and data about relationships and emotion regulation. Across the life span, relationships serve as both inputs and outputs for emotion regulation; that is relationships serve as a context for the development of emotion regulation and emotion regulation is a key component of socially competent relationships. In the sections that follow, we give examples that illustrate how these processes may operate in infancy and early childhood, and adolescence and young adulthood.

Infancy and Early Childhood

The topic of self-regulation has generated important research and theorizing regarding the role of regulation in young children's adjustment versus maladjustment (Calkins, 1994; Eisenberg et al., 1995, 1996; Thompson & Calkins, 1996). Two foci relevant to relationships have been emphasized. First, researchers have examined the way that caregivers and teachers provide a context for the acquisition of regulatory skills. Second, the implications of self-regulation for social competence and social versus nonsocial types of play has been examined. These two kinds of studies demonstrate that although the processes of self-regulation are integral to an individual's functioning across development, that functioning is often evaluated in relation to skills displayed in the context of significant others.

Research that has been conducted with infants and young children suggests that by the time a child has reached the third year of life, important milestones in the acquisition of skills that serve to manage emotional, behavioral, and physiological reactivity have been attained. One important assumption of much of the research on the acquisition of self-regulation is that parental caregiving practices may support or undermine such development and thus contribute to observed differences among toddlers (Thompson, 1994). In infancy, there is an almost exclusive reliance on parents for the regulation of emotion, and over time interactions with parents in emotion-laden contexts teach children that the use of particular strategies may be more useful for the reduction of emotional arousal than other strategies. There is also evidence that infants rely on parents for help in regulating physiological arousal related to behavioral organization (Spangler & Grossman, 1993; Spangler, Schieche, Ilg, Maier, & Ackerman, 1994). Furthermore, it is clear that particular maternal strategies related to inhibition of impulses and compliance to external demands are potent external regulators that eventually become internalized during toddlerhood (Kopp, 1982). Thus, parental practices are related to individual differences in regulatory behavior at all stages of development (Cicchetti, Ganiban, & Barnett, 1991).

One dimension of mother-child interaction that may be important in the development of self-regulation is the pattern of child management that the parent may use as the child makes the transition to toddlerhood. During this transition, many of the interactions between parent and child may be marked by efforts of the parent either to exert control over the child or to support competent self-management as the child seeks autonomy and independence. Such parental practices may be observed in everyday interactions where the parent has opportunities for

modeling and reinforcing the child's behaviors (Thompson, 1991). Several studies have found a relation between negative control and harsh discipline practices and the development of behavior problems characterized by a lack of behavioral control (Crockenberg, 1987; Pettit & Bates, 1989). Negative and controlling behavior on the part of the mother may inhibit the development of child behaviors that will support autonomy when the mother is unavailable (Crockenberg & Litman, 1990). In our recent research with toddlers, we demonstrated that maternal control and behavior was indeed related to less adaptive emotion regulation strategies and less physiological regulation during emotion-eliciting situations (Calkins & Johnson, 1998; Calkins, Smith, Gill, & Johnson, 1998). And, we found that maternal behavior characterized by positive reinforcement and verbal guiding was related to more compliant behavior in situations requiring control of behavior in the service of completing a parent request (Calkins et al., 1998). These data support the notion that although the strategies and behaviors children are acquiring are meant as self-regulating and should lead to more independent and self-guided behavior they are learned in the context of, and are therefore inevitably controlled by, dyadic relationships.

Dyadic relationships play a second role in young children's self-regulatory development. As children begin to engage in relationships with peers in both informal and formal contexts, their capacity for self-regulation constrains their success at social interaction. Recent research suggests that failure to acquire the skills needed to manage emotional responses and emotional arousal may lead to difficulties in such areas as social interaction (Calkins, 1994; Cicchetti, Ackerman, & Izard, 1995; Eisenberg et al., 1995, 1996; Rubin, Coplan, Fox, & Calkins, 1995). For example, children who display aggressive behaviors toward their peers may do so because they have developed maladaptive strategies for regulating anger affect (Fabes & Eisenberg, 1992). Strategies such as attentional control, avoidance, and instrumental coping may be useful in dealing with anger. Children who fail to use such strategies tend to vent their emotions and may become aggressive. Rubin and colleagues (Rubin, Coplan, Fox, & Calkins, 1995) observed that "dysregulated children" displayed more externalizing symptoms and more solitary active behavior (behavior characterized by physical or self-stimulating actions) when interacting with peers. Calkins and Dedmon (2000) recently observed that 2-year-olds characterized by parents as aggressive displayed poorer physiological and behavioral regulation.

In sum, it appears that the ability to utilize appropriate affect coping skills, skills which are learned in the context of family relationships, enhances the development of social skills (Rubin et al., 1995). Because such regulation is crucial to successful, reciprocal interaction (Calkins, 1994; Campbell & Cluss, 1982; Thompson & Calkins, 1996), children with deficits in self-regulation will be unable to engage in the kinds of behaviors that support the development of social competence.

Adolescence and Young Adulthood

Parental relationships continue to set a developmental context for emotion regulation in adolescence and young adulthood. Observations of family interactions in families of teenagers have shown that the manner in which parents interact with their teenage children is related to the offsprings' emotion regulation both concurrently and longitudinally. Within a family, maternal differences in undermining the autonomy of adolescent siblings have been related to the more restricted adolescent exhibiting more antisocial behavior (Jodl, Boykin, Tate, Hetherington, & Reiss, 1998). Whereas the directionality of the association between maternal behavior and

adolescent emotion regulation may not be clear in this case, longitudinal research examining parental undermining of adolescents' autonomy suggests that the parental behaviors are predictive of offspring difficulties with emotion regulation. Specifically, fathers' behavior undermining adolescents' autonomy in interactions when the adolescents were 16 predicted the offsprings' hostility as rated by close friends 9 years later (Allen, Hauser, O'Connor, & Bell, 1999). It appears that family relationships continue to assert a significant influence on emotion regulation throughout adolescence and this may have important consequences for later relationship development.

Adolescents' thoughts about their parental relationships also are related to their emotion regulation strategies, which have important implications for social and emotional adjustment in college. At a global level positive aspects of parental relationships (i.e., trust, communication, and lack of alienation from parents) have been related to positive social and emotional adjustment in college students (Bell, Lanthier, & Sargent, 1999). Other research, however, has documented that specific characteristics of parental relationships may be related to individual differences in emotion regulation style. College students' reports of parental control of their behavior, for instance, have been related to student-reported dependency; in contrast, reports of parental involvement have been related to self-critical tendencies (Bell, Bryan, Satsky, & Tietz, 1999). In terms of social adjustment different relationship characteristics were associated with the tendencies to manage affect through dependency and self-criticism. Friends of the students reported that dependency was related to the avoidance of interpersonal antagonism and that self-criticism was associated with a negative emotional tone in the friendship. It appears that individual differences in emotion regulation strategies, which relate to parental experiences, are detectable and likely to have a significant influence on the nature of volitional relationships such as college student friendships.

Conclusion

In responding to these target articles, we share Larsen's excitement about the bridges that can be established between social and developmental psychology in the science of mood regulation. The focus of our review clearly indicates that bridges can and should be developed not only for the physiological development of emotion regulation but with respect to the social contexts in which emotion regulation occurs. In our view, an understanding of self-regulatory processes is uniquely informed by an examination of the way in which relationships are at once both the input and the output of self-regulation, and by an analysis of how relationships fulfill these roles at different points in development.

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