Children's Understanding and Regulation of Emotion in the Context of Their Peer Relations

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Over the past decade, researchers have paid increasing attention to the role that emotions play in children's peer interactions. Although research on the behavioral and social cognitive correlates of children's peer relations is extensive, research on emotional correlates has emerged more slowly. A decade ago, the edited volume by Asher and Coie (1990), which reviewed each of the prominent areas of peer relations research, did not include a chapter on emotion.

The slow development of research linking emotion and children's peer relations is surprising, given that children's emotional functioning likely influences the quality of their social interactions. The problems with peers that some children experience may stem in part from difficulties with understanding and regulating emotion. Specifically, misinterpretation of a peer's emotions or dysregulation of one's own experience and expression of emotion can strain any peer interaction. If these patterns of misinterpretation and dysregulation are stable over time, they likely contribute to peer rejection and the display of problematic behaviors.

Two possible reasons for the delayed progress in research linking peer relations and emotional functioning stand out. First, researchers have encountered considerable difficulty measuring emotion-related constructs in children. Second, until recently, the field has lacked a model of emotional functioning to guide the development of ideas and the formulation of hypotheses. The primary aim of this chapter is to review existing research on the emotional correlates of peer relations in the context of a model of emotional functioning, or affective social competence (ASC), recently developed by Halberstadt, Denham, and Dunsmore (2001). Throughout this process, we highlight measurement difficulties and corresponding points in the model where empirical data on the emotional correlates of peer relations are lacking.

We begin by describing Halberstadt et al.'s (2001) ASC model. Next, we integrate this model with the constructs of understanding and regulation of emotion. In the body of the chapter, we review empirical literature linking
emotional understanding and emotion regulation with peer relations at each point of the model. Finally, we conclude by summarizing what this literature suggests about the emotional functioning of children with problematic peer relations.

A Model of Affective Social Competence

The ASC model presented by Halberstadt et al. (2001) is unique in that it is not described as a sequential process. As can be seen in Figure 5.1, the model

![Diagram of Affective Social Competence]

**Figure 5.1.** Halberstadt, Denham, and Dunsmore’s (2001) model of Affective Social Competence.
is depicted as a pinwheel in order to emphasize that the components of the model are in continuous interaction with one another. The model consists of three components—sending affective messages, receiving affective messages, and experiencing affect—along with a core of skills, dispositional attributes, and schemata that is unique to the self (self-factors). Halberstadt and colleagues lay out each component of the model in considerable detail, describing four processes common to sending, receiving, and experiencing affect. Although these individual processes provide a useful way to think about emotional functioning at a detailed level, our goal is to present a more general discussion of the ways that the three components of sending, receiving, and experiencing affect, plus the self-factors, are specifically linked to children’s peer relations.

Integration of the ASC Model With the Distinction Between Understanding and Regulation of Emotion

Although the ASC model is intuitively easy to understand, the components of the model do not map smoothly onto the constructs of emotion understanding and emotion regulation. Historically, researchers have thought of these two constructs as the key elements of emotional functioning and have used this distinction to guide their work. Even though the newly developed model provides a more fine-grained conceptualization of emotional functioning, it is important to integrate this model with the historical breakdown of emotional functioning into understanding and regulation. This integration allows us to place existing research more easily into the framework of the model while at the same time allowing us to identify points in the model where empirical data are lacking. Furthermore, integrating these two approaches affords us an opportunity to examine the construct of emotion regulation more fully. The definition, operationalization, and measurement of emotion regulation have troubled researchers for years, and we believe that the ASC model presents a way to separate the construct of emotion regulation into constituent pieces rather than considering it a single entity.

Theorists and researchers have conceptualized emotion regulation as involving the regulation of both the internal experience of emotion and the external expression of emotion (Eisenberg & Fabes, 1999). For example, Eisenberg and colleagues have distinguished between emotion regulation and emotion-related behavioral regulation, with the first referring to the regulation of the internal experience of emotion and the second referring to the regulation of external expressive behaviors. Internal emotion regulation corresponds largely to the ASC model’s experiencing component, while the regulation of the external expression of emotion maps most closely onto the ASC model’s sending component. Similarly, researchers have studied understanding of emotion primarily in terms of identifying emotional messages from others, corresponding to the ASC model’s receiving component. Finally, several constructs included in the ASC model’s self-factors likely influence the regulation of emotion (e.g., temperament), while others may be more related to understanding of emotion (e.g., knowledge of display rules).
Existing Research Linking Understanding and Regulation of Emotion With Peer Relations in the Context of the ASC Model

We begin by presenting research on the connections between understanding of emotion and peer constructs, followed by work on emotion regulation and peer constructs. Within these two sections, we organize literature based on the relevant components of the ASC model. Furthermore, at the level of each component, we divide existing research into two sections: studies relating emotion constructs to social competence and studies relating emotion constructs to problem behaviors. Measures included under the label Social Competence include sociometric nominations of liking and disliking; sociometric ratings; and teacher-, parent-, and observer-rated popularity, social skills, socially appropriate behavior, and social competence. Similarly, measures included in Problem Behaviors are peer-rated aggression; diagnoses of oppositional-defiant disorder (ODD) and conduct disorder (CD); self-reports of aggression; and teacher- and parent-rated aggressive behavior, disruptive behavior, difficult temperament, conduct problems, externalizing behavior, and problem behavior.

Understanding of Emotion

Research on emotion understanding is plentiful when compared with work on emotion regulation, in part because it is easier to measure. When researchers measure understanding of emotion, children answer straightforward questions that assess their knowledge about things such as identifying emotions and matching situations with appropriate emotions.

Receiving Affective Messages

The primary element of the receiving affective messages component of the ASC model is identifying emotion in others. Research on children's ability to perceive affect in others has been conducted primarily in two areas. First, researchers have measured children's ability to identify emotions in others on the basis of physical cues such as facial expression and tone of voice. Alternatively, children's ability to identify emotions on the basis of situational cues has been assessed through hypothetical vignette methodology involving videotapes, verbal stories, or puppets.

Social Competence. A number of researchers have investigated links between social competence and children's ability to identify emotions based on physical or situational cues. At a general level, Vosk, Forehand, and Figueroa (1983) had teachers and peers in third- through fifth-grade classrooms rate children's ability to perceive emotions in others. Children classified as rejected on the basis of peer sociometric nominations and ratings were considered poorer perceivers of emotion in others than children classified as accepted.

More specifically, most of the research on children's ability to identify physical cues of emotions in others has focused on facial expressions. In a study
of three- to five-year-old children, Field and Walden (1982) found that the ability to identify facial expressions of emotion was positively related to peer sociometric ratings. Using an older sample of 9- to 12-year-old children, Custrini and Feldman (1989) demonstrated that girls rated as higher in social competence by parents were more accurate in identifying facial expressions of emotion than were girls rated as low in social competence; however, this difference did not hold for boys. In a study by Edwards, Manstead, and MacDonald (1984) involving a similar age group, children classified as high status based on peer ratings of friendliness were more accurate at labeling emotional facial expressions compared with low status children. This same group of researchers found that children classified as rejected and neglected on the basis of peer sociometric nominations were worse at matching faces to emotion labels than were popular children at ages five, six, and nine years. Furthermore, across these time points, rejected children’s rate of improvement in their ability to match faces to emotion labels was significantly slower than their peers’ rate of improvement (Manstead & Edwards, 1992).

In addition to facial expressions, a few researchers have expanded this work to include other physical cues of emotion. For example, in a large sample of first- to fifth-grade children, Nowicki and Duke (1992, 1994) used facial expressions, tone of voice, gestures, and postures as physical cues of emotions. Children’s ability to use all four types of cues to identify emotions in others was related to the number of both liked and disliked nominations received from peers. Likewise, Boyatzis and Satyaprasad (1994) showed that, for four- to five-year-old children, teacher-rated popularity was positively related to the ability to decode emotional gestures in others.

Although the ability to identify emotions in others on the basis of physical cues is clearly a necessary skill, physical cues may not be accurate indices of emotions in others, given that people often disguise the external display of their internal feelings. Therefore, researchers have also studied children’s ability to identify emotions in others on the basis of situational cues and have related this skill to measures of social competence. Specifically, four-year-old children’s ability to match emotions to social situations is related to social preference scores based on peer ratings (Denham, McKinley, Couchoud, & Holt, 1990), to social preference scores based on sociometric nominations (Goldman, Corsini, & deUrioete, 1980), to negative nominations from peers (Goldman et al., 1980), and to positive nominations from peers (Rubin & Maioni, 1975). Using a similar age group, Philippot and Feldman (1990) demonstrated that children high in parent-rated social skills were better at matching emotions to videotaped scenarios than were children low in social skills.

It is interesting to note that only one study that we know of has used a sample of older children to assess individual differences in the ability to use situational cues to identify emotions in others. In their study of third- through fifth-graders, Vosk et al. (1983) found that those classified as rejected on the basis of peer nominations and ratings made more errors when identifying how a character in a videotaped interaction was feeling than did accepted children. Perhaps researchers have not examined the relation between this ability and social competence as often in older children because it is thought that this is a skill that older children have mastered. However, the findings of Vosk and
colleagues suggest that there is still variability in the mastery of this skill in middle childhood which can be explained in part by differences in social competence.

Finally, Cassidy, Parke, Butkovsky, and Braungart (1992) conducted a study in which they combined both physical and situational cues. In a sample of kindergartners and first graders, peer sociometric ratings were positively related to an aggregated variable that encompassed both the ability to identify facial expressions of emotion and the ability to match emotions to social situations.

**Problem Behaviors**. The literature linking children's problem behaviors to the ability to identify emotions based on physical or situational cues is much more limited than that involving social competence. The only study that we found relating problem behaviors to the ability to identify emotions on the basis of physical cues was conducted by Cook, Greenberg, and Kusche (1994). They asked first- and second-grade children to generate cues for identifying emotions in others and found that parent ratings of disruptive behavior were negatively related to the quality of cues generated. Likewise, Hughes, Dunn, and White (1998) conducted the only study that we know of linking problem behaviors to the ability to match emotions to social situations. Three- to six-year-old children rated by parents and teachers as having difficult temperament and high levels of conduct problems had more difficulty correctly identifying emotions in situations than did a matched sample of normal children.

**Gaps in the Literature and Future Directions**. What stands out is the scarcity of literature linking problem behaviors to skill at perceiving affect in others. Moreover, the relation between problem behaviors and identifying emotion in others needs to be examined in older children. Until more research is conducted in these areas, the role that the ability to receive affective messages plays in the development of children's problem behaviors remains uncertain.

More generally, the type of skills assessed as part of receiving affective messages is limited. Beyond examining knowledge of physical and situational cues of emotion, the field would be expanded by researching other relevant skills, such as the ability to monitor social interaction for the presence of affect in others. In addition, researchers have typically assessed identification skills in laboratory settings with static materials such as photographs. In contrast, identification may be much more challenging within the ongoing flow of social interaction.

**Self-Factors Related to Receiving Affective Messages**

Two constructs incorporated in the ASC model's self-factors seem closely related to receiving affective messages. First, a child's attributional tendencies may act as a filter when receiving affective messages from others. Children who attribute hostile intent to their peers may be more likely than other children to ascribe a negative valence to the emotional messages that they receive. In addition, a child's knowledge of display rules may influence the meaning that
he or she assigns to affective messages. For example, children who more fully understand that the external expression of emotion may not match internal experience will be careful about relying exclusively on physical cues to identify emotions in others.

We are distinguishing knowledge of display rules from use of display rules, because we believe that these two constructs map onto different components of the ASC model. Knowledge of display rules is incorporated into self-factors. This construct involves skills such as understanding that external expression may not match internal experience and being able to generate strategies for emotional dissemblance. In contrast, we believe that use of display rules is most closely related to the actual sending of affective messages. This construct is measured by self-reports or observations of the extent to which children express or dissemble emotion, as well as by children’s reports of strategies that they actually used to dissemble their feelings.

Social Competence. The one study that we found that explicitly examines the relation between social competence and children’s knowledge of display rules was conducted by Jones, Abbey, and Cumberland (1998) and involved a sample of third- and fifth-grade children. Interviewers read hypothetical stories to children and asked them how the character felt inside and looked outside. College students also answered these questions, and children earned points for giving responses similar to those of the college students. Children’s ability to generate display rules (to match the responses of college students) was positively related to teacher ratings of social competence and peer ratings.

In contrast, the literature relating attributional tendencies and social competence is much more robust. Crick and Dodge (1994) have thoroughly reviewed this literature; thus, this is the one point at which our review is not intended to be exhaustive. In numerous studies reviewed by Crick and Dodge, the tendency to attribute hostile intent to peers in situations in which the intent of the peer is ambiguous has been negatively related to a variety of different measures of social competence, including both peer and teacher ratings.

Problem Behaviors. Although we know of no studies linking knowledge of display rules to problem behaviors, the literature relating attributional tendencies to problem behaviors is ample and quite consistent. In the same review cited above, Crick and Dodge (1994) summarized a variety of studies showing that the tendency to attribute hostile intent to peers in ambiguous situations is positively related to different measures of problem behaviors, most notably peer nominations for aggression and teacher ratings of externalizing behavior.

Gaps in the Literature and Future Directions. Little work has been undertaken linking knowledge of display rules to social competence or problem behaviors. The developmental literature suggests that most children have at least a rudimentary understanding of display rules by the age of two or three. What is less well-known is whether individual differences in social functioning are related to the development of this knowledge.
In addition, other self-factors that have not been studied may act as filters in receiving affective messages and may be related to problematic peer relations. Examples of these self-factors include children's internal working models and aspects of children's self-concept.

**Regulation of Emotion**

A considerable amount of research has been conducted on a construct that researchers label *Emotion Regulation*. However, there is little agreement on how to define the term. Researchers also differ in their measurement of the construct, in that a wide array of often very different approaches has been used to try to measure emotion regulation. Given how disparate these measurement techniques are, emotion regulation likely consists of several components, rather than being a single entity. Our goal is to use the ASC model as a tool to organize these different methodologies and findings and to present a conceptualization of emotion regulation as consisting of three distinct pieces.

As presented above, three points in the ASC model encompass methodologies thought to measure emotion regulation. First, some researchers have assessed emotion regulation through self-reports of internal feelings or through physiological indices. We believe these methodologies relate to the regulation of the internal experience of emotion, and thus are best included under the Experiencing Affect component of the ASC model. Second, researchers have measured emotion regulation by assessing emotion expression (i.e., observations or self-reports), display rule use (i.e., observations or self-reports of expression), or observed and adult-rated coping. These measurement techniques involve regulating the external expression of emotion and thus fit into the Sending Affective Messages component of the ASC model. Third, researchers have tapped into emotion regulation by measuring children’s temperament, self-control, and knowledge of display rules via parent, teacher, and self-report. These measures assess personal qualities and characteristics that affect children’s motivation and ability to regulate emotion, and they are best included in the self-factors of the ASC model.

**Experiencing Affect**

One way that researchers have examined emotion regulation is by assessing aspects of children’s internal experience of emotion. Three elements of the experiencing affect component of the ASC model that have been studied in relation to problematic peer relations are the actual experiencing of affect, the ability to identify emotions in oneself, and the use of strategies for managing the internal experience of emotion. Although the actual experiencing of emotion is not equivalent to emotion regulation, the level of emotion experienced is implicitly determined by the regulation of internal feeling states. Similarly, children’s ability to identify emotions in oneself is a likely precursor to emotion regulation because efficient regulation often depends on first recognizing the presence and nature of emotion.
Researchers have struggled to validly measure the internal experience of emotion in children. The two methodologies that we believe most successfully assess the actual experiencing of emotion are self-reports of internal feelings and physiological measures of internal states. In terms of physiological measurement, we are limiting our review to those few studies that have linked problematic peer relations (in this case, primarily problem behaviors) to physiological indices in response to emotion-evoking stimuli.

**Social Competence.** We know of no investigations linking children's social competence to physiological indices in response to emotion-evoking stimuli. However, we did find one study that used self-report methodology to relate the actual experiencing of emotion to social competence. In a study of five-year-old children, Eisenberg and Faby (1995) conducted naturalistic observations and looked for instances of negative emotional display. When such situations were observed, children who witnessed these displays were asked to report how they felt. For girls only, the experience of negative affect in these situations was negatively related to sociometric peer ratings and teacher-rated social skills.

Research relating social competence to identification of emotions in oneself is similarly limited. In the only study we found that assessed this relation, Crasinski and Feldman (1989) had 9- to 12-year-old children report how they felt in response to video clips designed to elicit specific emotions. Girls rated as higher in social competence by parents were more likely to report the expected emotion than were girls rated as low in social competence; however, this difference did not hold for boys. Although at least a little research links social competence to the actual experiencing of emotion and to the ability to identify emotions in oneself, as far as we know, no studies to date have investigated the link between social competence and emotion control strategies.

**Problem Behaviors.** Similar to social competence, only one study that we know of has directly linked problem behaviors to self-reports of the actual experience of emotion. Underwood, Cole, and Herbsman (1992) studied third-, fifth-, and seventh-grade children classified as aggressive or nonaggressive on the basis of peer nominations. When children were shown anger-provoking video vignettes, aggressive children were marginally more likely to report feeling angry and more likely to report feeling angry or sad than were nonaggressive children.

In addition, a small research base has emerged associating problem behaviors with physiological methodologies in emotion-evoking paradigms. El-Sheikh, Ballard, & Cummings (1994) had four-year-old children view two videos of angry interactions between adults. They found that skin conductance reactivity was positively correlated with parent-rated externalizing problems for boys; however, this relation did not hold for girls. Similarly, Zahn-Waxler, Cole, Welsh, and Fox (1995) categorized four- and five-year-old children as low, moderate, or high for disruptive behavior disorders, based on parent and teacher ratings. Skin conductance was measured while children viewed a sad mood induction videotape. Girls classified as high in disruptive behavior disorders had more elevated skin conductance than any other group, male or female.
Finally, in a study of 8- to 11-year-old boys, van Goozen et al. (1998) compared boys diagnosed with oppositional defiant disorder or conduct disorder with normal controls. Children participated in a lengthy frustration and provocation procedure in which they competed against an opponent on a video monitor who continually provoked them. During this procedure, children diagnosed with ODD and CD displayed higher heart rate levels than did controls.

The only study we found linking problem behaviors to the ability to identify emotions in oneself was conducted by Cook et al. (1994). Cook and colleagues asked first- and second-grade children to give examples of times when they felt different emotions and provide cues for how they know that they are experiencing a specific emotion. Parent-rated disruptive behavior was negatively related to children's ability to provide appropriate examples when talking about their own emotional experiences and to the quality of responses for cues used to recognize feelings in themselves.

Similarly, the only study that we found that related problem behaviors to emotion control strategies in particular was conducted by Griffin, Scheier, Botvin, Diaz, and Miller (1999). They asked children to self-report on specific coping skills that they use to control emotion, specifically anger. Sixth graders' report of use of anger control skills was negatively related to their self-report of physical aggression.

Gaps in the Literature and Future Directions. The most noticeable gap is the lack of research linking social competence to physiological indices. Because social competence and problem behaviors often relate differentially to various constructs, research is needed that directly investigates associations between social competence and physiological measures. In addition, given the suspect validity of children's self-report, physiological measures are crucial if children's internal experience of emotion is to be measured accurately.

Although a few studies have broached research on individual differences in children's ability to identify emotions in themselves, more research is clearly needed. In the absence of such research, we can draw inferences from the large literature establishing that children with problematic peer relations have difficulty identifying emotions in others.

Research conducted by Griffin and colleagues (Griffin et al., 1999) is the only study we know of to assess directly children's use of emotion regulation strategies; more research in this area is clearly needed. In addition, this study highlights the absence of work on children's knowledge of such strategies. This work is important because individual differences in children's experience of emotion may result in part from differences in knowledge of strategies about how to regulate the internal experience of emotion. Moreover, such strategies may bear on the ability to regulate the external expression of emotion, the focus of the next portion of the chapter.

Sending Affective Messages

A second way that researchers have studied emotion regulation is by measuring children's external expression of emotion through observations or self-reports,
the core of sending affective messages in the ASC model. As with experiencing emotion, others have studied emotion expression without making a connection to emotion regulation. However, emotion regulation is inherently tied to emotion expression, in that the level of emotion expressed depends in part on emotion regulation.

Two other important aspects of sending affective messages have emerged in the literature. The first is the use of display rules to moderate emotion expression, measured through either laboratory observations or self-report methodologies. The second aspect involves the strategies children use to cope with stressful or emotional situations. Coping strategies may be used to regulate both the internal experience and the external expression of emotion. However, given that the methodologies used to measure coping (e.g., observations, adult ratings) can accurately assess only external forms of coping, these studies primarily give us insight into the regulation of the external expression of emotion. Thus, we believe these studies are best placed under Sending Affective Messages.

Social Competence. Several studies in our review specifically address emotion expression as it relates to social competence. In a highly cited study, Denham et al. (1990) naturalistically observed four-year-old children in their classrooms. Positive peer ratings were positively related to observed happiness and negatively related to observed anger. With a slightly older sample of second-grade children, Hubbard (2001) observed emotion expression in a laboratory-based, anger-arousing, game-playing paradigm. Children classified as rejected on the basis of sociometric nominations expressed more facial and verbal anger compared with average status children. Rejected children expressed more non-verbal happiness than did average children as well, but only when a turn of the game resulted in a positive outcome for them, suggesting that their positive emotion expression had a floating quality. Using self-report methodology, Underwood (1997) presented children with hypothetical vignettes designed to evoke six different emotions and asked them to report how much emotion they would express. For 8-, 10-, and 12-year-olds, children classified as rejected on the basis of sociometric nominations were more likely to report that they would express anger more openly than would average children and that they would express disappointment more openly than would popular children.

Fabes and Eisenberg (1992) conducted a study in which they assessed both children's expression of emotion and their coping strategies. Naturalistic observations of four-year-old children revealed that, for boys only, the display of overt anger following physical assault or social rejection was negatively related to teacher-rated social competence and positive peer sociometric ratings. Across both boys and girls, children observed to cope with angry provocations more directly and less aggressively were more likely to be rated by teachers as high on social competence and to receive more positive peer sociometric ratings. For example, more socially competent children were more likely to use active resistance and less likely to use revenge, venting, and adult-seeking forms of coping.

Three other studies by Eisenberg and colleagues have examined children's coping strategies in relation to social competence. Using a similar methodology
involving naturalistic observations of children's coping with angry provocations, Eisenberg, Fabes, Nyman, Bernzweig, and Pinuelas (1994) found that, for five-year-old children, sociometric ratings were positively related to the use of verbal objections. Their interpretation is that the use of verbal objections is a more constructive form of coping than other coping strategies measured, such as venting or physical retaliation.

In contrast to observational techniques, two studies by Eisenberg and colleagues measured coping strategies via teacher ratings and examined the relations to social competence. In an initial study, preschoolers' acting out coping was negatively related to teacher- and observer-rated social skills and to peer ratings. Furthermore, for boys only, these same social competence measures were positively related to constructive coping (Eisenberg et al., 1993). In a related study, Eisenberg and colleagues found that low levels of teacher-rated nonconstructive coping and high levels of teacher-rated constructive coping predicted teacher-rated socially appropriate behavior two years later. It is interesting to note that the stronger prediction was for nonconstructive coping (Eisenberg et al., 1995).

**Problem Behaviors.** As with social competence, researchers have related various measures of problem behaviors to observations of emotion expression. Cole, Zahn-Waxler, Fox, Usher, and Welsh (1996) showed children emotion-arousing videos and coded their facial expressions while viewing the films. On the basis of these observations, children were categorized as inexpressive, modulated expressive, or highly expressive. Both inexpressive and highly expressive children had higher rates of externalizing behavior problems as rated by teachers and parents than did children categorized as modulated expressive. In addition, inexpressive children had higher rates of internalizing symptoms than either of the other groups.

Using a similar methodology, Eisenberg et al. (1996) showed kindergarten through third-grade children a film in which the first half was neutral and the second half was distressing. During both portions of the film, observers coded for distress in children's facial expressions. Increases in facial distress over the course of the film were related to high levels of problem behaviors as reported by teachers and parents.

In contrast to expression, the construct of display rule use is much more difficult to evaluate. We found two studies linking display rule use with problem behaviors, and these studies used quite different methodologies. Underwood et al. (1992) showed seventh-grade children anger-provoking video vignettes and asked children to report on how angry they would feel and how much anger they would express. Using these two measures, Underwood and colleagues identified instances of display rule use when children reported feeling angry but reported not expressing anger. Children classified as aggressive on the basis of peer nominations used display rules less than nonaggressive children did.

In a second study of display rule use, Cole, Zahn-Waxler, and Smith (1994) placed preschoolers in a paradigm in which they received a disappointing gift. Observers coded children's emotion expression as they unwrapped the gift in one of two conditions: one where an experimenter was present and the other
where the child was alone. In addition, they collected parent and teacher ratings of disruptive behavior and conduct disorder symptomatology and classified children as high-risk or low-risk. Both high-risk and low-risk boys expressed negative emotion when they were alone. However, the low-risk boys expressed significantly less negative emotion when the experimenter was present, while the high-risk boys expressed the same amount of emotion in both conditions. These findings suggest that high-risk boys use display rules less than low-risk boys did, in that they expressed emotion regardless of the presence or absence of the experimenter. In contrast, the pattern was quite different for girls. Both high-risk and low-risk girls showed minimal amounts of negative emotion when the experimenter was present. However, when they were alone, low-risk girls allowed themselves to express more negative emotion, while high-risk girls continued to minimize their emotional display. Similar to boys, these findings suggest that high-risk girls use display rules less than low-risk girls do, although in this case, the lack of display rule use resulted from an overall minimization of emotion expression in both conditions.

Similar to their research about social competence, Eisenberg and colleagues have studied the relation between coping strategies and problem behaviors. Eisenberg et al. (1995) conducted a longitudinal study in which they followed children for two years from preschool–kindergarten to kindergarten–second grade. Concurrently, high levels of parent-rated nonconstructive coping and low levels of parent-rated seeking-support coping were related to parent-rated problems behaviors, for boys only. Longitudinally, high levels of parent-rated aggressive coping, low levels of parent-rated cognitive restructuring coping, and low levels of parent-rated support-seeking coping predicted parent-rated problem behaviors two years later.

Using a longitudinal design in which they followed children from preschool–kindergarten to third through fifth grade, Eisenberg and colleagues again evaluated coping strategies with teacher ratings. They related these strategies to parent-rated problem behaviors and to an aggregated social functioning variable, which included measures of teacher-rated popularity and social competence, as well as teacher-rated disruptive behavior and aggression. Parent-rated problem behaviors were associated with high levels of destructive coping concurrently. Destructive coping also predicted the aggregated social functioning variable, both concurrently and several years later (Eisenberg, Fabes, et al., 1997).

Gaps in the Literature and Future Directions. One obvious gap is the scarcity of research connecting display rule use with social competence. One way to approach this research would be to use methodologies similar to those used when relating use of display rules to problem behaviors, namely observations in laboratory paradigms and the comparison of self-reports of feelings and expressions. Another approach would be to ask children to self-report on the strategies that they use to dissemble the external expression of emotion in either hypothetical or real-life scenarios. This approach would allow researchers to explore how children go about dissembling their emotions when a display rule guides them to alter their expression.
Self-Factors Related to Experiencing Affect and Sending Affective Messages

Several constructs incorporated in the self-factors described in the ASC model may potentially relate to regulating both the internal experience and external expression of emotion. Eisenberg and colleagues have pioneered research in this area; they are the only researchers we know of to study self-factors specifically related to emotion regulation. The constructs that they have studied fall roughly into two categories. On the one hand, they have measured variables related to self-control, such as attentional control, ego control, impulsivity, and inhibition control. Although we do not believe that self-control and emotion regulation are equivalent, they do overlap because self-control is at least one part of emotion regulation. For example, attentional control can be used to regulate the internal experience of emotion, such as when a child distracts him- or herself in order to lower emotional arousal. On the other hand, they have measured characteristics of temperament, such as emotionality, emotional intensity, negative affect, and soothability. Although not directly a part of emotion regulation, temperamental factors can moderate the ability to regulate emotion. A child’s temperament may make emotion regulation more or less challenging, in part because children with difficult temperaments may have more negative or more intense emotions to regulate.

Social Competence. In a series of studies, Eisenberg and colleagues have assessed relations between social competence and self-factors related to regulating the internal experience (experiencing affect) and the external expression of emotion (sending affective messages). Among preschoolers, Eisenberg et al. (1993) found that teacher-rated emotional intensity was negatively related to teacher- and observer-rated social skills and peer ratings. In addition, for boys only, these two measures of social competence were positively related to attentional control and negatively related to negative affect. In a related longitudinal study, low levels of teacher-rated negative emotionality and high levels of teacher-rated attentional control in preschool predicted teacher-rated socially appropriate behavior two years later (Eisenberg et al., 1995).

Eisenberg, Guthrie et al. (1997) measured two aspects of self-control in kindergarten through third-grade children. Parents and teachers rated children’s ego control, and children participated in a paradigm in which their ability to refrain from looking at the solution to a puzzle was assessed. An aggregate of these measures of self-control was positively related to an aggregate of socially appropriate behavior (a combination of teacher-rated social competence and peer nominations for being nice), but only for children high in parent- and teacher-rated negative emotionality.

Problem Behaviors. Eisenberg and colleagues also have measured the links between these temperamental and self-control variables and problem behaviors. In a sample of kindergarten through third-grade children, parent- and teacher-rated problem behaviors were positively related to parent- and teacher-rated emotionality and to an aggregate variable encompassing parent-
and teacher-rated ego resiliency, ego control, attention shifting, and attention focusing. However, the relation between problem behaviors and the self-control aggregate was moderated by emotionality, such that the relation was stronger as emotionality increased (Eisenberg et al., 1996).

In a study with a similar age group, Eisenberg et al. (1995) created aggregated variables measuring aspects of self-control and temperament and related these variables to a concurrent measure of parent-rated problem behaviors. The teacher-rated self-control aggregate consisted of attention shifting, attention focusing, and self-control and was negatively related to problem behaviors. The parent-rated self-control aggregate, composed of attention focusing, impulsivity, self-regulation, and inhibition control, was also negatively related to problem behaviors. A parent-rated aggregate of unregulated negative emotion (anger and frustration, soothability, negative affectivity, negative emotional intensity) was positively related to problem behaviors, as was parent-rated negative emotionality. Longitudinally, for boys only, parent ratings of emotionality collected two years earlier positively predicted parent-rated problem behavior in kindergarten through second grade.

Using a longitudinal design in which they followed children from preschool—kindergarten to third through fifth grade, Eisenberg and colleagues (Eisenberg, Fabes, et al., 1997) related self-control and temperament variables to parent-rated problem behaviors and to an aggregated social functioning variable, which included measures of teacher-rated popularity and social competence, as well as teacher-rated disruptive behavior and aggression. They created a self-control aggregate composed of parent and teacher reports of attentional control, impulsivity, and inhibition control, and a negative emotionality aggregate composed of teacher and parent reports of negative emotional intensity and negative affect. Concurrently, parent-rated problem behaviors were associated with low levels of the self-control aggregate and high levels of the negative emotionality aggregate. In addition, both the self-control and negative emotionality aggregates predicted the aggregated social functioning variable, concurrently and several years later.

GAPS IN THE LITERATURE AND FUTURE DIRECTIONS. Eisenberg and colleagues have done an admirable job of investigating several self-factors that are pertinent to the process of emotion regulation. They have undertaken work with constructs that are difficult to measure and have managed to balance research efforts across the two domains of social competence and problem behaviors. However, in contrast to their work on social competence, which involves multiple sources of measurement, Eisenberg and colleagues have measured problem behaviors solely through parent ratings. Measuring problem behaviors via teacher or peer ratings as well would strengthen the link between self-factors and problem behaviors. Similarly, work is needed with older populations of children and developmental processes need to be examined.

Furthermore, the ASC model includes other self-factors that may impact emotion regulation and have not been investigated with respect to social competence or problem behaviors. For example, a child's self-concept may influence the emotions that he or she experiences and the emotional message that he or
she sends. In addition, a child’s motivation to interact with others may affect his or her emotional experience in social situations and may influence his or her emotional expression in these situations.

**Summary**

For each of the components of the ASC model, emerging research suggests consistent relations between emotional functioning and problematic peer relations. Although in the body of the chapter we have detailed areas where research is absent or scarce, there are several places where enough work has been conducted to allow us to draw tentative conclusions.

We identified two points in the ASC model that correspond most closely to the construct of emotion understanding: receiving affective messages and aspects of self-factors. In terms of the link between problematic peer relations and receiving affective messages, two findings are robust enough for conclusions to be drawn. Children with deficits in social competence have difficulty identifying the physical cues of emotions in others. Similarly, these children have paralleled deficits in their ability to use situational cues to identify emotions in others. However, the link between these abilities and problem behaviors has not been well established.

The construct of hostile attributional biases is the only self-factor uniquely related to emotion understanding regarding which a definitive link to problematic peer relations has been made. Both children with social competence deficits and children who exhibit problematic behaviors are more likely than their peers to attribute hostile intent to others in situations where the other’s intent is ambiguous. Hostile attributional tendencies may act as a filter when receiving and understanding emotional messages, such that children who attribute hostile intent to their peers may be more likely than other children to ascribe a negative valence to these messages.

We identified three points in the ASC model that correspond most closely to the construct of emotion regulation: experiencing affect, sending affective messages, and aspects of self-factors. In terms of experiencing affect, a single consistent finding has emerged. Children with behavior problems experience higher physiological responses or greater physiological reactivity in response to emotion-evoking situations than do other children. Given that children with behavior problems exhibit elevated physiology when compared with their peers, these children likely either experience higher initial levels of emotion or encounter more difficulty regulating their internal experience of emotion. However, as noted above, the connection between physiology in response to emotion-evoking stimuli and social competence has not been researched.

In terms of sending affective messages, two findings are sufficiently consistent for conclusions to be drawn. First, children with social competence deficits and children who exhibit problematic behaviors express more negative emotions than their peers, indicating that either they experience more negative emotion or they have difficulty regulating the external expression of that emotion. Second, these children are more likely than their peers to engage in nonconstructive forms of coping in social situations.
Finally, two aspects of self-factors are related to emotion regulation and have been consistently tied to problematic peer relations across several studies. First, in terms of temperamental factors, children with deficits in social competence and children who exhibit problem behaviors are likely to be more emotional and more emotionally intense than other children. Although not directly a part of the process of emotion regulation, temperamental factors can moderate the ability to regulate emotion. Children who are more emotional or more emotionally intense may have more difficulty regulating their emotion, in part because these children may have more negative or more intense emotions to regulate. Second, children with deficits in social competence and children who exhibit problem behaviors have some deficiencies in self-control.

The studies reviewed in this chapter reveal that emotional functioning is indeed an integral part of children’s social functioning. Although the field is in its infancy, the body of research reviewed here suggests that children with problematic peer relations experience difficulties in understanding and regulating emotion. The ASC model has proven useful in organizing empirical findings across the field and in organizing the disparate methodologies used to assess emotion regulation. In addition, the ASC model can be used to guide future researchers toward a more complete understanding of the role that emotional functioning plays in children’s peer interactions.

References


