EMOTION, REGULATION, AND MORAL DEVELOPMENT

Nancy Eisenberg

Department of Psychology, Arizona State University, Tempe, Arizona 85287–1107;
e-mail: nancy.eisenberg@asu.edu

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■ **Abstract** Research and theory on the role of emotion and regulation in morality have received considerable attention in the last decade. Much relevant work has concerned the role of moral emotions in moral behavior. Research on differences between embarrassment, guilt, and shame and their relations to moral behavior is reviewed, as is research on the association of these emotions with negative emotionality and regulation.

Recent issues concerning the role of such empathy-related responses as sympathy and personal distress to prosocial and antisocial behavior are discussed, as is the relation of empathy-related responding to situational and dispositional emotionality and regulation. The development and socialization of guilt, shame, and empathy also are discussed briefly. In addition, the role of nonmoral emotions (e.g. anger and sadness), including moods and dispositional differences in negative emotionality and its regulation, in morally relevant behavior, is reviewed.

CONTENTS

For millennia, philosophers have debated whether emotions can be moral and whether emotion contributes to higher-level moral judgment and behavior. Emotions, by their very nature, express a personal, polarized, and biased perspective. Thus, emotion has been viewed as biasing one's evaluations and cognitions and as disrupting rational, moral thought. More recently, philosophers have argued that biased emotional reactions are justified and that emotions help people

to distinguish moral features in specific contexts, to motivate moral behavior, and to undercut immoral behavior. In addition, emotions can play a communicative role by revealing our moral values and concerns to others and ourselves (Ben-Ze'ev 1997, Blum 1980).

Philosophers' changing view of the role of emotion in morality is consistent with the predominant view of emotion in psychology today. As is discussed, higher-order emotions such as guilt and sympathy are believed to motivate moral behavior and to play a role in its development and in moral character (e.g. Hoffman 1998, Walker & Pitts 1998). Moreover, in the 1990s there has been considerable interest in the role of basic emotions (i.e. those that are probably universal and involve less cognitive complexity), such as anger and fearfulness, in moral behavior (Eisenberg et al 1999a, Kochanska 1997).

In this chapter, recent issues and findings concerning the role of emotion and emotion-related regulation in moral functioning are reviewed. Behaviors of moral relevance as viewed by others, regardless of their motivation, are the primary foci of interest; the difference between behaviors that are truly moral and those motivated by nonmoral factors is discussed primarily in the context of differentiating between moral and nonmoral emotional reactions (e.g. sympathy vs personal distress). First, issues and findings pertaining to several moral emotions (guilt, shame, and empathy-related responding) are reviewed. Then the role of situational emotion (mood) in moral behavior is discussed briefly. Next, the relations of individual differences in emotionality and regulation to morally relevant behaviors are examined. Finally, research on the prediction of morally relevant behavior from the combination of emotionality and regulation is considered.

THE "MORAL" EMOTIONS

Several emotions, including guilt, shame, and empathy, have been viewed as playing a fundamental role in morality. Although pride is a self-evaluative emotion that can stem from moral behavior, research on pride usually has concerned achievement. Thus, pride is not discussed further.

The Self-Conscious Moral Emotions

Guilt and shame frequently have been implicated in theories of morality, with guilt being a quintessent moral emotion. Both are considered "self-conscious emotions," as is embarrassment. These emotions are labeled "self-conscious" because the individual's understanding and evaluation of the self are fundamental to these emotions.

Embarrassment   Keltner & Buswell (1997) argued that embarrassment is an emotion distinct from guilt and shame in that it involves antecedents, experience, and nonverbal displays that are different from those of other emotions. Recent research is consistent with the conclusion that embarrassment, in comparison to shame and guilt, is the least negative, least serious, and most fleeting emotion; it

is the least related to moral implications and moral transgressions; it involves less anger at the self and less interest in making amends; and it tends to involve surprising and accidental events for which people feel less responsible (Miller & Tangney 1994; JP Tangney, D Marschall, K Rosenberg, DH Barlow & P Wagner, unpublished data). Rather than playing a role in morality, embarrassment may serve to appease others for one's transgressions of social convention by eliciting light-hearted emotion (Keltner 1995) or may prevent loss of face and serve to assure adherence to important social norms (Leary et al 1996, Miller & Leary 1992). Thus, there generally is consensus that embarrassment plays at most a minor role in moral behavior.

Guilt and Shame   Guilt has been defined in a variety of ways. In classic psychoanalytic theory, it is viewed as a superego response to one's own unacceptable impulses, often based on anxiety caused by childhood conflicts over such issues as abandonment and punishment by parents. This type of guilt generally is seen as causing psychological distress and problems with adjustment, and today it is not viewed as playing much of a role in moral behavior. In contrast, in developmental and social psychology, guilt often refers to regret over wrongdoing. For example, it has been defined as "an agitation-based emotion or painful feeling of regret that is aroused when the actor actually causes, anticipates causing, or is associated with an aversive event" (Ferguson & Stegge 1998:20). The guilty actor accepts responsibility for a behavior that violates internalized standards or causes another's distress and desires to make amends or punish the self (Ferguson & Stegge 1998, Hoffman 1998, Tangney 1991). It is this type of guilt that is most relevant to a discussion of moral emotion.

Shame often has been used as a synonym for guilt and has received much less theoretical attention in the past. More recently it has been defined as " . . . a dejection-based, passive, or helpless emotion aroused by self-related aversive events. The ashamed person focuses more on devaluing or condemning the entire *self,* experiences the self as fundamentally flawed, feels self-conscious about the visibility of one's actions, fears scorn, and thus avoids or hides from others" (Ferguson & Stegge 1998:20).

The topic of guilt, although important in psychoanalytic theory and in early discussions of socialization, was virtually ignored by social and developmental psychologists in the 1970s and 1980s (Baumeister et al 1994). However, in the 1990s, there has been a flurry of research on these self-conscious emotions.

Differences Between Guilt and Shame   Many researchers and theorists now agree that guilt and shame (at least as defined above) are two distinct emotions and that an important difference between them is in the degree of focus on the self (Lewis 1971, Tangney 1998). When a person experiences shame, the entire self feels exposed, inferior, and degraded. Adults report that shame experiences are more painful and intense than are guilt experiences and are associated with a preoccupation with others' opinions. In contrast, guilt generally is less painful

and devastating than shame because, when one experiences guilt, the primary concern is with a particular behavior, somewhat distinct from the self (Ferguson et al 1991, Tangney 1998). Guilt involves feelings of tension, remorse, and regret, but does not affect one's core identity. Shame is associated with the desire to undo aspects of the self, whereas guilt is reported to involve the desire to undo aspects of behavior (Niedenthal et al 1994). Similarly, shame, but not guilt, is related to discrepancies between one's beliefs about the self and beliefs about what the self ought to be or what the ideal self would be (Tangney et al 1998).

It is important to note that guilt often has been operationalized as a response that involves concern about others' feelings and with reparation (e.g. Tangney 1991). It is likely that guilt that is less reparation oriented, based on irrational or illogical assessments of responsibility, or that is not resolved can affect feelings about the self over time and may have more maladaptive effects. Moreover, guilt and shame often co-occur; children may be especially prone to the combination (Ferguson et al 1999).

Guilt vs Shame: Links to Empathy and Moral Behavior   Based on adults' reports, shame and guilt both involve a sense of responsibility and the feeling that one has violated a moral standard (JP Tangney, D Marschall, K Rosenberg, DH Barlow & P Wagner, unpublished data). Moreover, both emotions can be responses to the same situations, and both can arise from concerns about the effects of one's behavior on others (Tangney 1992; JP Tangney, D Marschall, K Rosenberg, DH Barlow & P Wagner, unpublished data). Nonetheless, guilt appears to be the more moral emotion of the two. Shame, but not guilt, is likely to arise from nonmoral situations and issues (e.g. failure in performance situations or socially inappropriate behavior), and only shame seems to involve concern about others' evaluations (Ferguson et al 1991, Tangney 1992). Shamed people are relatively unlikely to try to rectify their transgression. Probably because guilt is focused more on the transgression than the self, guilt seems to motivate restitution, confession, and apologizing rather than avoidance (Tangney 1998; JP Tangney, D Marschall, K Rosenberg, DH Barlow & P Wagner, unpublished data). However, it should be kept in mind that, in much of this work, guilt has been defined as a reparative response, so these associations are not surprising.

Moreover, shame and guilt appear to be differentially related to empathy-related responding. Tangney (1991) found that guilt was associated with adults' self-reported, other-oriented empathic responsiveness, whereas shame was negatively associated, especially when controlling for guilt. Shame was especially associated with personal distress reactions (i.e. aversive, self-focused reactions to others in need or distress). When providing autobiographical accounts of shame and guilt experiences, people conveyed more empathy in guilt than in shame descriptions, although this association was somewhat stronger among adults than children (JP Tangney, D Marschall, K Barlow & DH Wagner, unpublished data). Nonetheless, because shame and guilt are substantially correlated and these anal-

yses were part correlations controlling for one another, it is likely that the distinction between guilt and shame is not quite as clear cut as these findings suggest.

Guilt and Shame as Predictors of Externalizing Behavior Tangney also has found that shame generally is more consistently and highly correlated than is guilt with externalizing problems, including aggression. Findings of this sort, if consistent, are important because problems with aggression are viewed as a component of antisocial behavior. When part correlations were used to assess relations of problem behavior with adults' guilt-free shame and shame-free guilt, shame still was consistently positively related to externalizing problems, whereas guilt generally was unrelated (Tangney et al 1992; also see Tangney et al 1996a). Similar results have been obtained for children in some studies (Ferguson et al 1997; JP Tangney, PE Wagner, SA Burggraf, R Gramzow & C Fletcher, unpublished data), although even shame-free guilt has been associated with externalizing problems for girls [but not for boys (Ferguson et al 1999)]. Among children, adolescents, and adults, guilt-free shame has been linked with direct, indirect, and displaced aggression, whereas shame-free guilt has been negatively related to these types of responding (Tangney et al 1996b).

Tangney's work has been conducted with nonclinical populations and usually has involved a measure of guilt in response to specific events (as assessed with brief vignettes). Moreover, in this work guilt was defined as an adaptive response such as taking responsibility or wanting to make reparations. It appears that dispositional guilt (or shame) that is more global, ruminative, and chronic and guilt assessed with a projective measure (as well as lack of guilt) are positively related to children's and adults' psychopathology, including externalizing problems (Ferguson et al 1996, 1999; Harder et al 1992; O'Connor et al 1999; Sorenson et al 1997). In addition, it appears that girls high in shame-free guilt sometimes may be prone to externalizing behavior, even when guilt is assessed by measures that tap concern with adhering to standards, expressing empathy, and taking appropriate responsibility (Ferguson et al 1999; Zahn-Waxler & Kochanska 1990). Ferguson et al (1999) suggested that the relation between guilt and externalizing problem behavior may hold because girls experience anger at being held to stricter standards of behavior than boys but also realize that failure to express guilt will reap negative consequences.

In discussing the differences in findings across measures, Tangney (1996) argued that her situational measure of guilt is the more valid way to assess the construct of guilt, especially shame-free guilt. Other measures of guilt often (*a*) rely on respondents' abilities to differentiate verbally between guilt and shame, (*b*) do not assess emotional reactions in specific contexts, and (*c*) likely tap a combination of guilt and shame. However, it is possible that guilt often is not as distinct from shame or as adaptive as operationalized in Tangney's work, especially in childhood. In any case, initial findings support the view that one gets different results with measures that focus on specific behaviors (and are unlikely to reflect ruminative guilt) and with measures of more global, chronic, and unre-

solved guilt (Eyre & Ferguson 1997, Ferguson & Stegge 1998, Quiles & Bybee 1997, Tangney et al 1995). It is quite possible that scenario measures of guilt in specific contexts—which are correlated with the personality trait of agreeableness in adulthood—tap empathy-based guilt, whereas other commonly used measures of guilt tap anxiety-based guilt (Einstein & Lanning 1998). Moreover, it is possible that there is a continuum of guilt proneness and that very low levels of guilt are related to externalizing problems, whereas very high levels of guilt are related to shame and irrational guilt.

The Relation of Guilt and Shame to Negative Emotionality and Regulation   It is likely that dispositional (personality or temperamental) characteristics of people play a role in the proclivities to experience guilt and shame. Because of the intrinsic role of emotion in these responses and the role of regulation in both managing emotion and in moral behavior, dispositional emotionality and regulation are likely correlates of the tendencies to experience guilt and shame.

In fact, guilt and shame have been linked to fear, hostility, anxiety, and sadness in adulthood (Forgas 1994, Harder et al 1992, O'Connor et al 1999, Watson & Clark 1992) and childhood (Zahn-Waxler & Robinson 1995). The degree to which shame and guilt are differentially related to negative emotion likely varies with the measure used. In some studies with adults (JP Tangney, D Marschall, K Rosenberg, DH Barlow & P Wagner, unpublished data) or toddlers (Zahn-Waxler & Robinson 1995), there were few differences in the patterns of relations for guilt and shame. In contrast, in another study with adults, shame and anxious guilt were positively correlated with negative emotionality (i.e. neuroticism on a measure of the "Big Five" personality factors), whereas situational guilt (which often may be based on empathy) was not (Einstein & Lanning 1998). Moreover, some researchers have found that guilt, especially situationally based guilt, is unrelated or weakly related to various negative emotions, especially when the effects of shame are controlled in the correlations, whereas shame is associated with anger and anxiety, even when guilt is controlled in the correlations (Tangney et al 1992, 1996a; JP Tangney, PE Wagner, SA Burggraf, R Gramzow & C Fletcher, unpublished data). Until situational guilt based on situational empathy is differentiated from chronic guilt, findings are likely to be inconsistent.

During the toddler and early-childhood years, the link between guilt or shame and other negative emotions appears to occur primarily in girls (Kochanska et al 1994), with the exception that fear has been related to guilt in male, but not female, toddlers (Zahn-Waxler & Robinson 1995). However, because mothers sometimes provided the data on children's guilt and emotionality, it is possible that the sex difference is based on something related to mothers' beliefs about girls' and boys' emotions. Although there is some evidence that females show shame more than do males, it is not clear that there are sex differences in guilt (Ferguson & Eyre 1999). Moreover, it is quite possible that displays of guilt in very young children actually reflect a combination of shame, guilt, and fear and that guilt in the very young has a different significance than does guilt in older

children and adults (who better understand notions of responsibility and causality).

The relation of guilt and shame to individual differences in dispositional regulation seldom has been examined. Emotionally well-regulated children would be expected to manage their emotional arousal so that they are not overwhelmed by feelings of shame; moreover, behavioral regulation would be expected to underlie some markers of guilt such as reparation. Consistent with these expectations, Rothbart et al (1994) found that mothers' ratings of 7-year-olds' regulatory capacities (effortful control, including the abilities to voluntarily shift and focus attention and inhibit behavior) were positively correlated with mothers' reports of their children's guilt/shame (combined). In a study with 2- to 6-year-old children, regulatory capacities were associated with affective discomfort after wrongdoing, but only for girls (Kochanska et al 1994). Although, as is discussed below, measures of conscience often are associated with dispositional regulation, these measures do not necessarily tap guilt. Thus, although well-regulated children might be expected to experience relatively high levels of situationally and age-appropriate guilt, links between regulation and both guilt and shame have been insufficiently examined.

Summary   In the 1990s, there has been an increase in research on guilt and shame, the difference between the two, their relation to morally relevant behaviors, and their socialization correlates. Findings often vary as a function of the index of guilt. Salient issues to be addressed include the meaning of various measures of guilt, gender differences in guilt and in the relation of guilt or shame to moral behavior, and the role of regulatory capacities in guilt vs shame. In addition, it is important to determine whether different negative emotions are differentially related to chronic vs empathy-based guilt or shame, for example, whether anxiety and anger are related more closely to shame than guilt.

Empathy-Related Responding

Empathy-related reactions can be other- or self-related or sometimes neither. Eisenberg and colleagues (e.g. Eisenberg et al 1994a) have defined empathy as an affective response that stems from the apprehension or comprehension of another's emotional state or condition and is similar to what the other person is feeling or would be expected to feel. If a child views a sad person and consequently feels sad (even though the child differentiates his or her own and the other person's emotional states or situations at a rudimentary level), that child is experiencing empathy.

In Eisenberg's view, pure empathy is not other-oriented. However, with further cognitive processing (assuming that the individual is old enough to differentiate between one's own and others' internal states), an empathic response usually turns into either sympathy, personal distress, or some combination (perhaps alternating) thereof. Sympathy is an emotional response stemming from the apprehension or

comprehension of another's emotional state or condition, which is not the same as what the other person is feeling (or is expected to feel) but consists of feelings of sorrow or concern for the other. Thus, if a girl sees a sad peer and feels concern for the peer, she is experiencing sympathy. A sympathetic reaction often is based upon empathic sadness, although sympathy also may be based on cognitive perspective taking or encoded cognitive information relevant to another's situation accessed from memory. Personal distress is a self-focused, aversive, affective reaction to the apprehension of another's emotion (e.g. discomfort or anxiety), such as the distress of a person feeling anxious when viewing someone who is sad.

About two decades ago, Batson (1998) proposed that sympathy (which he has called empathy) is associated with other-oriented motivation, whereas personal distress is associated with the motive to alleviate one's own aversive affective state. Thus, sympathy is viewed as an other-oriented moral emotion fostering altruism. In contrast, personal distress is hypothesized to lead to prosocial behavior only when that is the easiest way to reduce one's own aversive emotional state (e.g. in a situation in which one cannot escape dealing with the person causing one's distress). Thus, sympathy is viewed as a moral emotion, whereas personal distress is believed to result in egoistically motivated behavior.

In the 1980s, there was considerable interest in why people sometimes help others at a cost to themselves and whether truly selfless altruism exists. These questions stimulated numerous empirical studies demonstrating a positive relation between sympathy and prosocial behavior and a negative relation—or sometimes a lack of a relation—between personal distress and prosocial behavior, both in adults (Batson 1998) and in children (Eisenberg & Fabes 1991, 1998). Work on this topic has continued into the 1990s. Another emerging issue in recent years has been the role of emotionality and regulation in empathy-related responding.

Empathy-Related Responding and Prosocial/Antisocial Behavior   Researchers have continued to demonstrate empirical relations between prosocial behavior and both situationally induced and dispositional empathy-related responding. In the social psychological literature, sympathy and personal distress generally have been elicited in laboratory situations and then examined in relation to prosocial behavior directed toward the target of that emotion. In general, the positive relation between sympathy and prosocial behavior has been replicated (Batson 1998, Batson et al 1997b, Trobst et al 1994). Among children, markers of empathy and sympathy in specific situations, such as their facial, behavioral, and physiological reactions to viewing others in need or distress, also have been associated with situational or dispositional prosocial behavior (Denham et al 1994; Fabes et al 1993; Hastings & Zahn-Waxler 1998; Holmgren et al 1998; Zahn-Waxler et al 1992, 1995). In addition, situational markers of personal distress generally have been negatively related or unrelated to children's prosocial behavior (e.g. Holmgren et al 1998, Fabes et al 1993, Miller et al 1996), although self-distress has been positively related to toddlers' prosocial behavior when the toddlers caused

the other person's distress [so the self-distress may have reflected a rudimentary guilt reaction (Zahn-Waxler et al 1992)]. The diversity of methods used in various studies with children enhances one's confidence that the relation between situational sympathetic concern and prosocial behavior is real, albeit sometimes modest in magnitude.

In research with adults, investigators have demonstrated that sympathy may not only motivate moral behavior in specific contexts (Batson et al 1997b), but it may also cause enduring changes in an individual's concern about others' welfare (Batson et al 1995). For example, people who are induced to experience sympathy for a member of a stigmatized group actually develop more benign attitudes toward those individuals weeks later (Batson et al 1997a). However, sympathy, like egoism, also can undermine concern with the welfare of a group if an individual has to choose between allocating resources to the group or to someone with whom they were induced to sympathize (Batson et al 1999).

The central focus in much of the social psychological research on empathy is an issue that has been debated fiercely for two decades—whether prosocial behavior induced by empathy (or sympathy) is really motivated by altruism (a pure other-orientation) rather than egoism. The most recent challenge to the notion of true altruism is the argument that sympathy for another leads to a greater sense of self-other overlap, with the consequence that helping is not selfless but is directed toward both the other person and the self [i.e. to make oneself feel better (Cialdini et al 1997)]. Empirical data both for and against this argument have been published (Batson et al 1997b, Cialdini et al 1997), and the debate continues (Batson 1997, Neuberg et al 1997). In this literature, Cialdini et al (1997) assessed merging of self-other boundaries with a measure of "oneness" (i.e. adults' reports that they would use the term "we" to define their relationship with the target of sympathy and their selection of circles drawn close to each other to indicate the closeness of their relationship with the other person). However, it is possible that their measures of oneness reflect the awareness that they feel concern for the person or close to the person but not a merging of boundaries. It is difficult to imagine actual merging of boundaries when the study participants were responding to hypothetical situations.

Other researchers have been concerned with the relation of the dispositional tendency to experience sympathy and/or personal distress (rather than situationally induced empathy-related responding) to such prosocial behaviors as providing support, volunteering, or helping. In general, links between dispositional sympathy and prosocial behavior have been demonstrated, albeit to various degrees, in research with both adults (e.g. Carlo et al 1999, Penner & Finkelstein 1998, Trobst et al 1994) and children and adolescents (e.g. Carlo et al 1998; Eisenberg et al 1991c, 1995a; also see Estrada 1995, Roberts & Strayer 1996, Eisenberg & Fabes 1998). It is likely that sympathy is most closely linked to modes of prosocial behavior that are other-oriented, such as spontaneously emitted sharing behaviors in preschoolers (Eisenberg et al 1999c). In addition, dispositional sympathy and empathy have been associated with low levels of

aggression and externalizing problems in adolescence (Carlo et al 1998, Cohen
& Strayer 1996, Hastings & Zahn-Waxler 1998, Tremblay et al 1994).

Relations between sympathy/empathy (situational or dispositional) and pro-
social behavior generally have been modest to moderate, and sometimes, when
measures of the two constructs have not been obtained from the same reporter or
in the same setting, they have been weak. Thus, an important issue is to identify
factors that moderate the degree of this association. When predicting prosocial
behavior, Miller et al (1996) found an interaction between level of moral judgment
and situational sympathy such that children's helping of a distressed peer (shown
in a videotape) was highest if children were high in both needs-oriented (rudi-
mentary other-oriented) moral reasoning and in reported sympathy. Similarly,
Knight et al (1994) found that the combination of high dispositional sympathy,
high perspective taking, and the ability to understand units and the value of money
predicted high helping of a peer in need (although sympathy alone also was
associated with helping). Studies such as these support the need to identify dis-
positional and situational moderators of the strength of the relation between
empathy-related responding and prosocial (or antisocial) behavior.

***The Relation of Empathy-Related Responding to Emotionality and Regula-
tion***   The differing relations of personal distress and sympathy to prosocial
behavior are consistent with the conclusion that the subjective experiences of
sympathy and personal distress are different. Eisenberg et al (1994a) hypothesized
that empathic overarousal in situations involving negative affect results in an
aversive, overaroused emotional state, which leads to a focus on one's one needs
and, consequently, personal distress (also see Hoffman's 1982 discussion of
empathic overarousal). In support of this view, investigators have found that neg-
ative emotional arousal, especially for reflective affective states such as sadness
(Green & Sedikides 1999), is associated with a focus on the self (Wood et al
1990) and that people exhibit higher physiological arousal and sometimes report
more distress in situations likely to elicit person distress in contrast to sympathy
(Eisenberg & Fabes 1991; Eisenberg et al 1991a,b).

Regulation   Conceptualizing sympathy and personal distress in the above manner
led to the prediction that people who can regulate their emotions and emotion-
related behavior should be relatively likely to experience sympathy rather than
personal distress. Empirical findings in studies of adults have been somewhat
consistent with this prediction. In several studies, various measures of behavioral
and attentional regulation (e.g. attention shifting) have been negatively correlated
with dispositional personal distress (Eisenberg et al 1994a, Eisenberg & Okun
1996, Okun et al 1999). Sometimes dispositional regulation has been positively
related to adults' sympathy (Eisenberg & Okun 1996), although in two studies
this relation was significant only when individual differences in negative emo-
tionality were controlled (Eisenberg et al 1994a, Okun et al 1999). In a longitu-
dinal study with children, adults' reports of children's dispositional regulation

were positively related to teachers' or children's reports of children's dispositional sympathy, both in concurrent analyses and over time (Eisenberg et al 1996c, 1998; Murphy et al 1999). In addition, Rothbart and colleagues (1994) found that mothers' ratings of 7-year-old children's empathy were related to children's effortful control (an index of regulation), as rated by mothers. Thus, there appears to be a positive relation between regulation and sympathy/empathy, especially in childhood, and a consistent negative relation between personal distress and regulation in adulthood (also see Davies et al 1998).

Relations between situational measures of empathy-related responding and measures of dispositional regulation are considerably weaker than are analogous relations for dispositional empathy-related responding. In a study with adults, self-reported sympathy, sadness, and distress in response to empathy-inducing films all were negatively related to a self-report measure of emotion regulation. Facial reactions of sadness, distress, concern, and disgust to the empathy-inducing films were unrelated to measures of regulation, and men's heart rate acceleration during an evocative portion of the film (an index of personal distress) was negatively related to self-reported emotion regulation [but primarily for men exposed to the relatively evocative film (Eisenberg et al 1994a)]. Thus, the relations of measures of situational empathy-related responding to regulation varied with the specific measure and sex of the individual.

Somewhat more consistent relation between situational sympathy and dispositional regulation have been found for children. Ungerer et al (1990) found that 4-month-olds who were low in self-regulation were prone to personal distress at 12 months of age. In two studies with preschoolers or school-aged children, positive relations were found between markers of sympathy (heart rate, facial, or self-reported) or empathic facial sadness and adults' ratings of children's attentional and/or behavioral regulation (Eisenberg & Fabes 1995, Guthrie et al 1997). However, findings sometimes were obtained for only one sex, and often they were weak. Thus, although situational measures of empathy-related responding tend to be associated with regulation, especially for children, the findings are complex and relatively modest in magnitude. Given that empathic responding in any particular context may not be a reliable index of general empathy-related dispositions, it is not really surprising that the relations between situational measures of empathy-related responding and regulation are relatively small.

Cardiac vagal tone, which is substantially correlated with heart rate variance, is considered to be an index of physiological emotion regulation and is believed to promote calm and prosocial behavior [because of its inhibitory effect on sympathetic pathways to the heart (Porges 1997)]. Relations of these measures to children's empathy-related responding have been inconsistent. Some researchers have found that high vagal tone is negatively associated with indices of sympathy and prosocial behavior (Zahn-Waxler et al 1995); others have found positive (Fabes et al 1993), mixed (Eisenberg et al 1996c), or no (Eisenberg et al 1998) relations. The sample for which negative relations were found was selected to include children at risk for externalizing problems, and the relation of vagal tone

or heart rate variance [both of which are correlated with lack of behavioral inhibition for boys (Kagan 1998)] to empathy-related responding may vary with characteristics of the sample, as well as sex (Eisenberg et al 1996c, Fabes et al 1993).

Emotionality Because people prone to experience negative emotions would be expected to be susceptible to vicariously induced emotion, Eisenberg & Fabes (1992) and Eisenberg et al (1999a) hypothesized that people prone to intense emotions (especially emotions such as sadness or distress rather than anger) are prone to both sympathy and personal distress. In addition, because people who are content may be less preoccupied with their own needs and better able to respond to the needs of others, sympathy is hypothesized to be associated with positive emotionality. In general, adults' reports of dispositional sympathy and personal distress, as well as empathy, have been positively related to intensity and frequency of negative emotions (Davies et al 1998, Davis 1994, Eisenberg et al 1994a, Eisenberg & Okun 1996, Okun et al 1999). Moreover, adults' self-reports of sympathy, empathic sadness, and personal distress to an empathy-inducing film (the latter of which may have reflected sympathy to some degree), as well as their facial reactions and heart rate (for men), generally have been positively correlated with intensity of self-reported dispositional emotionality and sadness, but not frequency of negative emotionality (Eisenberg et al 1994a). In addition, positive emotional intensity has been positively associated with sympathy and unrelated or negatively related to personal distress (Eisenberg et al 1994a).

Findings for children differ from those for adults and vary with the measure of empathy-related responding (i.e. empathy or sympathy) and emotion. Rothbart et al (1994) found that mothers' ratings of 7-year-olds' dispositional empathy (rather than sympathy) were uncorrelated with anger/frustration in infancy but positively related to high fearfulness. Empathy was positively related to negative emotionality (especially sadness) at age 7 when other aspects of temperament (including regulation) were controlled in the analysis. Anger at age 7 was negatively related to empathy when regulation was controlled.

In a longitudinal study of children's *dispositional* sympathy, Eisenberg and colleagues (Eisenberg et al 1996c, 1998; Murphy et al 1999) found that parents' and teachers' reports of school children's intense and frequent negative emotions tended to be negatively correlated with (or unrelated to) children's dispositional sympathy (as reported by teachers and sometimes the children). It is likely that the adults' reports of negative emotionality often reflected problematic negative emotions such as anger or anxiety that might undermine sympathy over time. In the same study, boys' physiological arousal (heart rate and skin conductance) when exposed to a relatively distressing film clip was related to low dispositional sympathy. Thus, boys prone to physiological overarousal appeared to be low in dispositional sympathy (Eisenberg et al 1996c; also see Strayer 1993).

Findings for *situational* measures of empathy/sympathy in children suggest an association between empathy-related responding and both positive and negative emotionality. In a study of toddlers, children who sustained a high level of empa-

thy and concern in response to simulated distress incidents (the measure appeared to tap empathy, sympathy, and/or prosocial behavior) from 14 to 20 months of age were observed to express more negative emotion and reported to express more positive emotion at 14 months of age than did those who dropped in empathy/sympathy. Those who increased in empathy/sympathy expressed more positive emotions than those who remained low in empathy (Robinson et al 1994).

In studies of preschool or school-aged children, situational sympathy has been negatively related to adults' reports of children's negative emotionality, whereas facial expressions or self-reports of children's situationally induced empathic sadness have been associated with adults' reports of children's emotional intensity in general or intensity of negative emotions (Eisenberg & Fabes 1995, Guthrie et al 1997). Children's situational personal distress responses sometimes have been positively correlated with negative emotionality (Guthrie et al 1997). Thus, it appears that situational empathic distress and sadness tend to be positively related with negative emotionality and emotional intensity in childhood (also see Roberts & Strayer 1996), whereas situational measures of sympathy are related to low negative emotionality, at least as rated by adults. It is likely that markers of situational sympathy have been negatively related to negative emotionality because the latter reflected adults' perceptions of nonconstructive negative emotions (e.g. anger or anxiety) and sympathetic children are too regulated to express high levels of such emotion.

In brief, there is some evidence that sympathy is positively related to intensity of dispositional emotional responding and some kinds of negative emotions (sadness), especially among adults (who generally provide self-report data). This does not mean that people who respond with sympathy necessarily react intensely to empathy-inducing stimuli; as was discussed above, there is evidence that sympathetic individuals are relatively well regulated. Moreover, reports of frequent negative emotionality tend to be associated with low levels of sympathy. Dispositional personal distress and empathy have been positively related to negative emotional intensity and/or frequency of negative emotionality. It is likely that empathy, personal distress, and sympathy relate somewhat differently to negative emotionality and that it is important to differentiate among different types of negative emotions (e.g. anger and sadness) and intensity vs frequency of negative emotionality when examining these relations.

Interaction of Emotional Intensity and Regulation   Eisenberg & Fabes (1992) hypothesized that emotional intensity in general (i.e. with valence of emotion unspecified) or for negative emotions such as sadness would be moderately associated with sympathy, although optimally regulated people were expected to be somewhat sympathetic regardless of level of emotional intensity. If people can modulate their emotions as needed, their dispositional emotionality should not be an important contributor to empathy-related responding. In contrast, people high in intensity of negative emotions would be expected to be prone to personal

distress if they lack the ability to regulate themselves because they will become
overwhelmed by their vicariously induced negative feelings.

These predictions have been tested in moderational analyses. Although these
predictions have not been supported in studies of adults (Eisenberg et al 1994a,
Okun et al 1999), they have received some empirical support in research with
children. When participants in a longitudinal study were age 6–8, there was an
interaction between general emotional intensity and regulation when predicting
teacher-reported sympathy in children. Unregulated children were low in sym-
pathy regardless of their general emotional intensity; such children were likely to
be overwhelmed by their vicarious emotion when it was experienced. In contrast,
for children who were moderate or relatively high in their regulation, sympathy
increased with the level of general emotional intensity. Thus, children who were
likely to be emotionally intense were sympathetic if they were at least moderately
regulated.

Two years later, children's sympathy was predicted by a similar interaction
between behavioral regulation and general emotional intensity, but only for boys.
In addition, at this age, attention focusing was associated with sympathy for
children who were relatively low in emotional intensity. For children who are not
predisposed to experience intense emotions, the ability to focus on events outside
themselves may enhance sympathy by facilitating the intake of information about
others and, consequently, cognitive perspective taking (Eisenberg et al 1998).

Summary   Research on empathy-related responding has remained a focus in the
study of prosocial behavior. Although it is clear that sympathy is associated with
prosocial behavior whereas personal distress reactions tend to be negatively or
unrelated to prosocial action, there still is debate regarding the nature of sym-
pathetic motivation. Another focus of interest has been the relation of empathy-
related responding to emotionality and regulation, especially dispositional
differences in these aspects of temperament or personality. The emerging body
of research indicates that negative emotionality is related to empathy-related
responding, but that relations vary with the type of empathy-related response and
with the dimension (intensity or frequency) and type of negative emotion. More
work on the ways that individual differences in emotionality and regulation inter-
act in predicting empathy-related responding will be necessary to understand the
role of emotion and its regulation in empathy-related responding.

The Development of Guilt, Shame, and Empathy

There has been some disagreement about the age at which guilt emerges (and
relatively little discussion about the emergence of shame). M Lewis (1998) has
argued that shame and guilt emerge at about age three, once children (*a*) can
clearly recognize the self as different from other people, (*b*) have developed some
standards of behavior, and (*c*) are able to use these standards to evaluate their
own behavior. Others (e.g. Barrett 1998) have suggested that the precursors of

guilt or shame are observed during the second and third years of life. Hoffman (1998) described a developmental sequence in which prosocial actions and reparative behaviors (which often are viewed as evidence of guilt) both emerge from early empathic capacities. Based on his theory, in the second year of life, as children increasingly develop the ability to differentiate between their own and others' internal states, they are capable of becoming empathically involved in others' distress. In Hoffman's view, young children initially respond to others' distress with self-oriented distress, but they are increasingly able in the early years to respond with other-oriented sympathetic concern. Empathy for a victim, combined with an awareness that one has caused another's distress, is believed to result in guilt, which motivates attempts at reparative behavior. Moreover, empathy or sympathy often motivates prosocial actions, even if the child did not cause another's distress or needy condition.

Consistent with the hypothesizing of Barrett and Hoffman, there is evidence that 2-year-olds have some awareness of right and wrong and that they engage in reparative behaviors (see Barrett 1995). Children 34 months old have some understanding of the difference between moral and social conventional transgressions (Smetana & Braeges 1990). Empathic responding is observed in the second year of life (Zahn-Waxler et al 1979, 1992), and children 2 to 3 years old frequently show emotional reactions indicative of empathy and engage in reparative behavior in response to mishaps (Cole et al 1992). Moreover, parents report that guilt increases from 14 to 24 months of age (Zahn-Waxler & Robinson 1995), that remorse increases from 14–18 to 30–40 months (Stipek et al 1990), and that discomfort about wrongdoing, apologizing, compliance with standards of conduct, and concern about others' wrongdoing increase from 21–33 months to 34–46 months (Kochanska et al 1994). Thus, it appears that precursors or rudimentary forms of guilt are evident before age three and that guilt increases with age in the early years. Empathy continues to increase with age in childhood (see Eisenberg & Fabes 1998), but it is unclear whether these age-related changes are reflected in developmental changes in guilt past the early years.

There also is evidence of a difference between shame and guilt responses in 2-year-olds. Barrett and colleagues (1993) observed toddlers' reactions when they were playing alone with an experimenter's rag doll and a leg fell off. Some toddlers (avoiders) displayed a shame-relevant pattern; they avoided the experimenter and delayed telling the experimenter about the mishap. Other children (amenders) showed a guilt-relevant pattern of behavior. They repaired the doll quickly, told the experimenter about the mishap shortly after the experimenter returned, and showed relatively little avoidance of the experimenter (e.g. gaze avoidance or active avoidance). The parents of amenders reported that their toddlers showed more guilt relative to shame at home than did parents of avoiders.

As might be expected, the development of conscience is associated with moral behavior. For example, Kochanska et al (1994) found that children 26–41 months old who exhibited evidence of a conscience (i.e. were reported by mothers to feel affective discomfort over transgressions and to display evidence of spontaneous

reparation, confession, attempts to regulate their behavior, and concern over oth-ers' wrongdoing) transgressed less than their peers in an experimental context. Moreover, during contrived mishaps, these children's violations of standards were associated with behavioral and affective responses indicative of guilt [e.g. accep-tance of responsibility, apologies, focus on reparation, and distress (Kochanska et al 1995)]. This association between evidence of conscience and moral behavior also has been found in studies with preschoolers and elementary school children (e.g. Lake et al 1995).

The Socialization of Guilt, Shame, and Empathy

Recently there has been a small burst of activity in assessing parental practices and parenting styles associated with children's guilt or conscience. In early work on guilt, children's guilt was linked to parental use of inductive-reasoning tech-niques [i.e. reasoning with the child about his/her behavior, e.g. "You made Doug cry. It's not nice to bite" (Zahn-Waxler et al 1979)] and relatively low power assertion [e.g. use of punishment or threats thereof (Hoffman 1977)]. Parental use of induction is believed to foster sympathy, an other-orientation, and optimal levels of attention to and learning about parental expectations and the reasons for behaving in a moral manner (Hoffman 1983), especially if inductions are deliv-ered with emotion and are used by loving parents (Hoffman 1977). Recently researchers have replicated the findings pertaining to power assertion and induc-tions (Ferguson & Stegge 1995, Kochanska et al 1996b, Krevans & Gibbs 1996). For example, Krevans & Gibbs (1996) found that children tended to be high on empathy/sympathy and on the combination of empathy and guilt—which is likely to reflect other-oriented, empathy-based guilt—when their parents used relatively high amounts of inductive discipline. Moreover, it was found (DJ Laible & RA Thompson, submitted for publication) that mothers' references to feelings, needs, or intentions and moral evaluative statements (e.g. "good boy;" "this was a nice thing to do") during conversations with their 4-year-olds were associated with mothers' reports of children's guilt, remorse, and related reactions to a transgres-sion or mishap, as well as with internalized compliance.

Findings concerning the relation of empathy and guilt to love withdrawal are somewhat less consistent, both in the past (Hoffman 1983) and in recent work. For example, Krevans & Gibbs (1996) found no relation between empathy/ sympathy (combined) or guilt and parental use of love withdrawal as discipline, whereas Ferguson & Stegge (1995) found that love withdrawal was associated with high loadings in a canonical correlation on both guilt and shame reactions. It is likely that Ferguson & Stegge's index of guilt reflected the general tendency to evaluate oneself rather than empathy-based guilt. Moreover, these researchers found that guilt, controlling for shame, was associated with the presence of paren-tal anger in negative situations and parental pride reactions in positive encounters.

Kochanska and colleagues demonstrated that the relation between parental socialization and the development of conscience often is moderated by charac-

teristics of the child. They typically have operationalized conscience as some combination of guilt-related affect, an orientation toward reparation, and internalized compliance (which conceptually is less clearly linked to guilt). Kochanska (1991) found that 8- to 10-year-olds' affective/moral orientation (reflecting, in part, their report of empathy and guilt when completing vignettes about transgressions) and children's concern with reparation were positively related to maternal behavior deemphasizing the use of power assertion (based on both self-reports and observed maternal behavior) when the children were toddlers. However, these relations held primarily for children with a fearful/anxious temperament (Kochanska 1991). This finding was replicated in another sample at two ages (Kochanska 1995, 1997). Kochanska (1995) argued that, for fearful/anxious children, gentle maternal discipline deemphasizing power results in an optimal, moderate level of anxious arousal. A moderate level of arousal during disciplinary encounters is viewed as motivating and optimal for the processing of information and not so overwhelming that the child cannot attend to the information provided in the disciplinary encounter (Hoffman 1983).

Investigators also have found an association between mutual positive affect or a secure attachment between mother and child and children's conscience or guilt (Kochanska & Aksan 1995; DJ Labile & RA Thompson, submitted for publication) and empathy or sympathy (Kestenbaum et al 1989, Waters et al 1986; see Eisenberg & Fabes 1998). This pattern of findings is consistent with the view that a mutual interpersonal orientation between parent and child enhances the socialization process. However, a positive cooperative interactive set, as reflected in a secure attachment between parent and child and maternal responsiveness, seems to be especially important for the development of guilt in relatively fearless children (Kochanska 1995, 1997), a finding consistent with the notion that children's temperament moderates the association between parental socialization-related behaviors and the development of conscience.

Moreover, the development of sympathy in children has been associated with (*a*) parents being high in sympathy, (*b*) parents allowing their children to express negative emotions that do not harm others, (*c*) low levels of hostile emotion in the home, (*d*) parental practices that help children to cope with negative emotions, and (*e*) parental practices that help children to focus on and understand others' emotions (Eisenberg et al 1991a, 1992; Fabes et al 1994; see Eisenberg & Fabes 1998). It is unclear whether parental practices that are supportive and help children to understand and deal with their emotions also foster empathy-based guilt past the early years of life.

Although researchers seldom have differentiated between shame and guilt in research on parental socialization, relatively recent findings suggest that the two may be differentially related to parental socialization practices. Ferguson & Stegge (1995) found that shame (when guilt was low) was predicted by high parental anger and the absence of any discipline, including the absence of parental induction, love withdrawal, and power assertion. Shame also was associated with parents' not responding positively to appropriate behavior. The combination of

shame and guilt was predicted by an array of socialization responses by parents (especially induction, but also including love withdrawal and, to a lesser extent, power assertion). In contrast, in a study of children's parenting experiences at age 5 and self-criticism at age 12, Koestner et al (1991) found that reports by 12-year-olds of feeling ''guilty,'' of perceived incompetence, and of not living up to their own standards were associated with same-sex parents' restrictiveness and rejection at age 5. Given the focus on chronic and global deficiencies of the self in the measure of self-criticism, it is likely that these authors tapped shame as much as guilt and that there is a positive relation between the development of shame in children and parental anger, rejection, or the lack of appropriate discipline.

Other work suggests that chronic and unjustified guilt can develop in children, especially girls, in families with depressed mothers. For example, Zahn-Waxler et al (1990) found that 5- to 9-year-old children of depressed mothers expressed aberrant, distorted, and unresolved themes when responding to a semiprojective procedure involving vignettes developed to elicit children's narratives about inter-personal conflict and distress. Guilt responses are likely to be fused with shame and may represent misplaced assignment of responsibility to the self when children's guilt is assessed with responses to vignettes about negative events in which the child is not unambiguously responsible (Ferguson et al 1999). Misplaced responsibility may be based on a merging of guilt and empathy in young children, especially daughters of depressed mothers, which makes them particularly vul-nerable to false beliefs about their responsibility and blameworthiness for others' problems (Zahn-Waxler & Robinson 1995). Depressed mothers, in comparison with well mothers, experience more guilt and irritability in their relationships with their young children, so their children frequently are exposed to these emo-tions. Moreover, repeated exposure to a sad caregiver may increase the likelihood that children will feel responsible for negative events simply because they are there. In addition, depressed mothers may model a negative attributional style (''it's my fault''), and their children may experience more love withdrawal when their mothers become less involved and emotionally unavailable because of their depression (Zahn-Waxler & Kochanska 1990). However, there is little research in which the reasons for guilt in children of depressed mothers have been tested directly.

RELATIONS OF NONMORAL EMOTIONS TO MORALLY RELEVANT BEHAVIOR

In recent research, a variety of primary, nonmoral emotions such as happiness, sadness, and anger have been examined as predictors or correlates of moral behav-ior. Some of this research has pertained to situationally induced emotion, whereas other research concerns dispositional emotion.

Mood

In the 1970s and 1980s, a popular topic of research was the relation between temporary mood states (often experimentally induced) and such morally relevant behavior as prosocial behavior and aggression. In this work, the focus was on the typical effects of mood (across individuals) rather than on individual differences in the effects of mood. Researchers found that positive mood is consistently related to enhanced prosocial behavior and that a variety of mechanisms might explain this association (Carlson et al 1988). In addition, in a meta-analytic review, Carlson & Miller (1987) found an association between negative emotion and helping, which varied with the degree to which attention was focused on the self vs others, with helpers' feelings of responsibility for the mood-lowering event, and with a high level of objective self-awareness (i.e. the focusing of attention on the self as an object).

In recent work, researchers' focus has been primarily on the processes that underlie the effects of positive and negative mood (e.g. Forgas 1995). For example, Wegener & Petty (1994) found that people in positive moods, in comparison with those in sad or neutral states, tend to choose activities based on their affective (hedonic) consequences for the self. This research has direct implications for the type of helping behaviors people will engage in and their motives for assisting in a positive mood. For example, such findings support the view that people in positive moods often help to maintain their positive mood (see Carlson et al 1988). Moreover, it appears that when adults experience negative emotional states elicited by threatening stimuli (aversive slides such as mutilation, starvation, a plane crash, or a battered woman) or events (stress of impending exams), they make decisions based on short-term outcomes regardless of possible long-term consequences. These findings can be interpreted as indicating that threat-related negative emotional states undermine the quality of cognitive processing and, as a consequence, regulatory capacities (Gray 1999). Given the relation of regulation to moral behavior (which is discussed shortly), negative moods owing to threatening stimuli likely predict impaired moral functioning.

Some recent work pertaining to temporary mood states and moral behavior or cognition relates to feelings associated with perceived injustice. Anger and other negative emotions (e.g. disgust and sadness) tend to be substantially linked with the perception of injustice and immorality (Mikula et al 1998, Scher 1997). Although appraisals of injustice often may elicit anger reactions, it also has been argued that the experience of justice-related negative emotions such as guilt or anger frequently leads to consideration of justice issues (Scher & Heise 1993; also see Hoffman 1998, on empathic anger).

Situationally induced, directly experienced anger also has been associated with morally relevant behavior and cognition. As is discussed below, situational and trait anger predict externalizing problems (e.g. aggression). In addition, priming anger increases adults' punitive attributions and judgments of others in fictional tort cases (Lerner et al 1998). People induced to feel anger also are likely to

attribute responsibility or blame to others (Dix et al 1990, Keltner et al 1993), which could increase the probability of aggressive behavior.

Thus, it is clear that temporary mood has some effect on a range of morally relevant aspects of functioning. However, the role of mood in morally relevant behavior has not received as much attention in the previous decade.

Individual Differences in Emotionality and Regulation

Emotionality   Recently investigators interested in morality and emotion, especially developmentalists, have focused more on the role of individual differences in emotionality in morality than on the effects of situational moods. Much of the recent relevant work on the topic has pertained to aggression and externalizing behavior. In general, children prone to intense and frequent negative emotions (usually operationalized as a mix of different negative emotions such as dysphoria, anger, and anxiety) tend to exhibit relatively high levels of aggression and externalizing problems (e.g. bullying, stealing, and lying) (Eisenberg et al 1996a, Stice & Gonzales 1998). An association between temperamental negative emotionality and externalizing problems has been found across time and reporters (Eisenberg et al 1995b, 1997a, 1999b), as well as when uncontaminated measures of the constructs have been used [i.e. when overlapping items were removed (Lengua et al 1998)]. Moreover, children prone to intense negative emotions tend to deal nonconstructively with their anger (Eisenberg et al 1994b), and those prone to intense externalizing and internalizing emotions (combined) may be low in prosocial behavior (Eisenberg et al 1996b; see Eisenberg & Fabes 1998 for a review). In addition, individual differences in intensity and frequency of negative emotionality predict adolescent substance abuse/use, which sometimes is considered an externalizing behavior (Chassin et al 1993, Cooper et al 1995; cf. Stice & Gonzales 1998).

Anger/frustration appears to be especially linked to externalizing problems. Anger proneness in infancy as rated by mothers (Goldsmith 1996) or observed in the laboratory (Rothbart et al 1994) has predicted aggression in the preschool or early school years. Individual differences in typical intensity of anger reactions have been related to the degree to which young children's reactions to anger are constructive (Eisenberg et al 1994b). Moreover, self-reported anger among high school seniors predicted delinquency 9 months later, even controlling for earlier levels of delinquency (Colder & Stice 1998). In another study, incarcerated juvenile offenders' dispositional anger predicted aggressive behavior over the subsequent 3 months (Cornell et al 1999; also see Carlo et al 1998). In adulthood, frustration in the workplace has been linked to antisocial behavior (Spector 1997). Moreover, in situations involving provocation or harm, self-reported individual differences in feelings of anger are associated with adults' blaming others (Quigley & Tedeschi 1996) and have been found to mediate between attributions of intentionality and nonconstructive aggression reactions to the provocateur (Graham et al 1997, 1992).

Some types of emotional and physiological reactivity may buffer children from externalizing problems. Elevated levels of cortisol responding in novel settings are, if associated at all, negatively related to externalizing problems in children (Stansbury & Gunnar 1994). Cortisol reactions in these situations likely reflect an emotional response to stress. Moreover, children and adolescents who are high in their baseline physiological responding tend to be relatively low in delinquency and other measures of externalizing problems (Mezzacappa et al 1997, Pine et al 1998, Raine 1993). In addition, children prone to internalizing emotions such as fear are prone to low levels of aggression (e.g. Ladd & Profilet 1996, Rothbart et al 1994) and are easily socialized on measures of conscience (e.g. Kochanska 1997). Thus, negative emotions such as fear or anxiety may serve to inhibit externalizing behavior, perhaps because individuals prone to these emotions are less likely to find the stimulation and emotion associated with externalizing behavior pleasurable and are likely to experience more negative emotion (anxiety, guilt, and perhaps empathy) than other people when they engage in inappropriate behavior. Indeed, the tendency to be unemotional sometimes has been linked to antisocial behavior. For example, although children with psychopathic traits may be prone to anger, they also are characterized as low in guilt and empathy, as callous, and as shallow in their emotional responding (Frick 1998).

Regulation   Attention to temperamental/personality regulation and its correlates has increased substantially in recent years. Most measures of regulation pertain to the control of overt (often emotionally induced) behaviors; others tap the regulation of attention or cognitions related to emotion or stress (see Eisenberg et al 1999a). Attentional modes of regulation are believed to be heavily involved in the process of modulating emotional arousal, whereas capabilities such as the ability to inhibit and activate behavior are believed to be particularly important for modulating and regulating the behavioral expression of emotion.

An emerging body of work supports the assumption that individual differences in regulatory behavior play a role in morally relevant behavior, as well as in social competence more generally. In childhood, behavioral regulation has been associated with low externalizing problem behavior in numerous studies, sometimes even when information about regulation and outcome variables was obtained from different sources and when behavioral measures of regulation were obtained [e.g. persistence on a task or delay of gratification (Eisenberg et al 1996a; Huey & Weisz 1997; Krueger et al 1996; Lynam 1997; Oosterlaan & Sergeant 1996, 1998)]. In infancy and early childhood, the ability to inhibit and control one's behavior has repeatedly been associated with a range of measures of conscience and committed (internalized) compliance (e.g. following commands wholeheartedly, making reparation, cheating, and resistance to temptation), concurrently and over time (Kochanska et al 1996a, 1997, 1998; Stifter et al 1999). Behavioral regulation (including low impulsivity) also has been linked to low levels of adolescents' substance abuse (e.g. Block et al 1988, Colder & Chassin 1997). In

adulthood, disinhibition, which involves impulsivity and low behavioral control, is associated with antisocial behavior, antisocial personality problems, and substance abuse (e.g. Clark & Watson 1999). Thus, temperamental or personality traits such as impulsivity and voluntary behavioral inhibition appear to be intimately related to the development of conscience and antisocial behavior.

The ability to regulate attentional processes also seems to play an important role in the development and enactment of morally relevant behavior. Attentional regulation has been associated with high social competence and prosocial behavior (Eisenberg et al 1993, 1999a, 1997b; Ladd & Profilet 1996) and with low problem behavior (Eisenberg et al 1996a, Ladd & Profilet 1996), as have composites of behavioral and attentional regulation (Eisenberg et al 1995b, Rothbart et al 1994; also see Fabes et al 1997). Problems in attentional regulation, as tapped by measures of executive cognitive functioning, have been linked to conduct disorders (Moffitt 1993) and psychopathy (O'Brien & Frick 1996, Patterson & Newman 1993). Concentration problems in childhood also have been associated with lower-level moral judgment in adolescence (Hart et al 1998).

Recently several groups of researchers identified personality types that reflect undercontrolled, overcontrolled, and optimal styles of functioning in children from Iceland (Hart et al 1997), the United States (Robins et al 1996), and New Zealand (Newman et al 1997). In general, the well-adjusted (optimal) children were resilient, self-assured, not emotionally labile, and in two samples (Hart et al 1997, Newman et al 1997), attentionally and/or behaviorally regulated. Of most relevance, the adjusted children were not prone to externalizing problems (Hart et al 1997, Newman et al 1997). However, undercontrolled individuals, who tended to be low in regulation and sometimes irritable and impulsive, were prone to externalizing problem behaviors concurrently or later in adolescence or adulthood. In these three studies, the items used to classify children into the three personality groups included ratings of a wide variety of social behaviors and/or items pertaining to both regulation and emotionality. Thus, the investigators did not examine individual differences in regulation and emotionality separate from each other, from their social consequences, or from other temperamental or personality characteristics. Nonetheless, their findings converge with other research in demonstrating an association between regulation and morally relevant behaviors.

Prediction of Morally Relevant Behavior from the Combination of Emotionality and Regulation   The combination of negative emotionality and low regulation may be especially problematic in regard to externalizing problems. In two major longitudinal studies, researchers have used composite measures of combined negative emotionality and low regulation/impulsivity to predict externalizing problems over time. In the Dunedin, New Zealand, longitudinal sample, emotional lability and negative emotionality at age three, when combined with lack of regulation (e.g. a short attention span and restlessness), predicted aggressive behavior

problems, criminality and conduct disorders, and antisocial behavior (but not socialized delinquency) in adolescence (Caspi et al 1995) and antisocial behavior (Newman et al 1997), criminality (Henry et al 1996), and antisocial personality (Caspi et al 1996) in adulthood. For example, children identified as undercontrolled (i.e. emotionally labile, restless, with short attention spans, and high in approach and negativism) at age 3 were 2.9 times as likely as adults to be diagnosed with antisocial personality disorder, 2.2 times as likely to be recidivistic offenders, and 4.5 times as timely to be convicted for a violent offense (Caspi et al 1996). Similarly, Pulkkinen (1996) and Pulkkinen & Hamalainen (1995) assessed low self-control in childhood by using a measure that appeared to tap emotionality as well as low regulation. Scores on low self-control tended to predict proactive aggression (aggression without provocation) in adolescence (particularly for boys) and criminal offenses in adulthood.

Often individual differences in emotionality and regulation predict unique, additive variance in externalizing problem behavior, even though emotionality and regulation obviously are correlated (Derryberry & Rothbart 1988, Eisenberg et al 1993). For example, Eisenberg et al (1996a) found that both low regulation and high negative emotionality provided significant, unique prediction of externalizing problem behavior (also see Eisenberg et al 1995b, 1997a). Rothbart and colleagues (1994) obtained less evidence of additive effects, but they controlled another aspect of temperament (surgency) in the regressions they used to assess the unique effects of emotionality and regulation on aggression and defiant behavior (also see Lengua et al 1998).

In addition to main effects, both Rothbart & Bates (1998) and Eisenberg & Fabes (1992) have emphasized the importance of examining moderational relations when assessing the prediction of adjustment from such aspects of temperament/personality as emotionality and regulation. Eisenberg and colleagues (1999a) argued that emotionality, particularly negative emotionality, might have fewer negative implications for behavior if the individual is well regulated.

Some research is consistent with this view, despite the difficulty of obtaining interaction effects in small or moderately sized samples. For example, Eisenberg et al (1996a) found that children who were low in negative emotionality (frequency and intensity) were low in externalizing problem behavior, regardless of their level of regulation (attentional and behavioral regulation combined). However, for children who were more prone to negative emotion, higher regulation often predicted less externalizing problems, sometimes even across reporters (i.e. when reports of emotionality/regulation and externalizing behavior were obtained from different adults). Similarly, Colder & Stice (1998) found that anger was related to concurrent delinquency at higher but not lower levels of impulsivity (although the relation was marginally significant even at lower levels of impulsivity). However, this interaction was not significant when predicting adolescents' delinquency 9 months later. In addition, somewhat similar interactions have been obtained for both socially competent (Eisenberg et al 1995b) and prosocial behavior (Eisenberg et al 1996b) in other samples, although not in small samples for

which the power to detect interaction effects was quite low (Eisenberg et al 1997a). Furthermore, there is some evidence, albeit not entirely consistent, that emotionality and regulation sometimes interact when predicting substance abuse problems in adolescence (Colder & Chassin 1997, Colder & Stice 1998; see Eisenberg et al 1999a, for a review).

Few researchers have used longitudinal designs and statistics that optimize the investigator's ability to make inferences about causality from correlational data. In a follow-up of the longitudinal sample of Eisenberg et al (1996b), similar moderational relations were found 2 years later with structural equation modeling. At two ages, negative emotionality moderated the relation of attentional regulation to children's externalizing problems. The relation of attentional regulation to low externalizing problems was stronger for children who were low rather than high in regulation. Findings for behavioral regulation were in the same direction, but the moderating effect was weak and nonsignificant in the best structural equation model (so behavioral regulation predicted low externalizing behavior for all children). Of particular interest, the aforementioned pattern of relations in children in grades 3 to 6 held even when the effects of externalizing behavior from 2 years earlier were taken into consideration. Thus, consistency over time in externalizing problems did not account for the relation between emotionality/regulation and externalizing problems at the 2-year follow-up (Eisenberg et al 1999b).

Thus, it appears that behaviors of moral relevance are predicted not only by regulation or emotionality (especially negative emotionality) in isolation, but also by the combination of the two. Findings such as these suggest that individual differences both in the tendency to experience negative emotions and in the ability to modulate emotional arousal should be considered when theorizing about and predicting moral development and behavior.

SUMMARY

Recent research highlights the importance of emotionality and emotion-related regulation in the study of moral development and behavior. Currently, relevant work is scattered throughout different bodies of literature and generally has not been integrated. As the construct of emotion continues to permeate psychological theory and research, knowledge about the role of emotion and its regulation in morality is likely to increase. Moreover, empirical work in the field is starting to move from attention to mere correlation to concern about moderating influences, mediational processes, and the direction of causality between morally relevant variables and emotionality and regulation. An important problem with the existing literature is the confounding of measures in the research (i.e. overlap of items measuring the various constructs), and this issue also is beginning to receive attention (e.g. Lengua et al 1998, Sanson et al 1990). Thus, it is likely that research on the contributions of emotionality and regulation to moral development and behavior will be conceptually and methodologically stronger in the next decade

and will be increasingly integrated with our developing knowledge of the role of emotion in human functioning.

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