

CHAPTER 1

Introduction

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The goal of the authors in this volume of the *Handbook of Child Psychology* was to present state-of-the-art reviews of conceptual and empirical work on social, emotional, and personality development. This was not an easy task given the rapid advances in theory and research in the past decade or two and the reality of page limitations for the volume. Yet each author or set of authors has provided the reader with an integrative summary of the current status of an important topic within the domain of social, emotional, and personality development and, to some degree, with a vision for the future.

EMERGING THEMES

The chapters in this volume provide the reader with a perspective on the major issues and themes in the field and on the prevailing Zeitgeist in the study of social and personality development. Although any given theme or issue may not be evident in every chapter, there are certain issues that appear throughout the volume. Some issues and themes have become more salient since the last edition of the *Handbook* in 1983; these are discussed below.

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A Focus on Emotion

This is the first edition of the *Handbook* to include a chapter dedicated solely to the topic of emotion (rather than the more general topic of socioemotional development in infancy). The neglect of emotion in prior editions is not surprising given the history of the study of emotion in psychology in the past 50 years. Due to the influence of behaviorism and then cognitive approaches in psychology, emotion was considered a nuisance variable (and sometimes an anathema) for many years. In the past 10 to 15 years, however, emotion has become central to the study of social development, as well as to many other subdisciplines of psychology.

The current emphasis on emotion is a dramatic departure from the view of emotions in the past as intrapsychic events "which do not play a causal role in behavior and which are secondary by-products of more significant processes" (Campos, 1984, p. 148). Today emotions are viewed as motivational forces that play a role in much of our social behavior. As noted by Parke (1994), in contemporary psychology, emotions are viewed as "both products and processes of social interactions, relationships, and contexts" (p. 158).

The central role of emotion in contemporary developmental psychology is reflected in most of the chapters in this volume. This focus is, of course, most evident in the Saarni, Mumme, and Campos chapter on emotion, Saarni

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et al. take a functionalist perspective in which emotion is closely linked to the context and what a person is trying to do. Emotion is viewed as synonymous with the significance of a person-event transaction for the individual.

Due to the immense body of work relevant to emotion, Saarni et al. limit their coverage and focus primarily on emotion communication, the role of context in emotion, children's understanding of emotion, and how children cope with emotions and emotion-eliciting contexts. Their review of this portion of the emotion literature demonstrates that children's understanding of emotion and its expression, as well as children's communication of and coping with emotion, change considerably with age. Moreover, emotional understanding, communication, and regulation seem to have a profound influence on social interaction, although the relation between social interaction and these aspects of functioning may be reciprocal. Saarni et al.'s review reflects major domains of interest in recent work on emotion and provides a contemporary, contextually oriented perspective on emotional development.

Temperament, Personality, and Emotion

Emotion can be viewed in both situationally specific and dispositional terms. In theory and research on temperament and personality, enduring individual differences in emotional proclivities (i.e., dispositional differences) are fundamental constructs. Thus, dispositional emotion is a salient topic in the two chapters that deal with temperament and the biological bases of socioemotional functioning. The body of work pertaining or relevant to temperament is so large and inclusive at this time, and approaches to the topic vary to such a degree, that two chapters in this volume focus primarily on temperament, one authored by Mary Rothbart and John Bates and the other by Jerome Kagan.

Temperament is defined by Rothbart and Bates as constitutionally based individual differences in reactivity and self-regulation. Reactivity includes emotional responding, both in regard to specific emotions (e.g., fear) and more general constructs of emotion (e.g., negative emotionality or emotional intensity; see Larsen & Diener, 1987; Rothbart & Bates, Ch. 3, this Volume). Moreover, some aspects of temperament that are not essentially emotional involve the regulation of temperamental reactivity (e.g., inhibitory control; see Ahadi & Rothbart, 1994; Eisenberg, Fabes, & Guthrie, in press; Gray, 1987; also see Mischel, Shoda, & Peake, 1988) or are associated with particular emotions (e.g., Kagan, Ch. 4, this Volume; Rothbart, Ahadi, & Hershey, 1994). Further, there appear to be emotion-relevant

physiological correlates of some aspects of temperament (see Kagan, Ch. 4, this Volume). Thus, individual differences in dispositional emotionality and its regulation are integral to contemporary temperament theory and research.

Dispositional emotionality also plays an important role in the personality literature. Temperament-based differences in emotional reactivity are believed to feed into personality differences in childhood and adulthood. Personality has been defined as "individual differences in the tendency to behave, think, and feel in certain consistent ways" (Caspi, Ch. 6, this Volume). Personality theorists often emphasize the structure and function of personality, including not only traits, but also personal concerns (i.e., a wide array of motivational, developmental, or strategic constructs that are contextualized in time, place, or role) and life stories (McAdams, 1995).

Caspi suggests that aspects of temperament in childhood are linked to the structure of adult personality (i.e., aspects of the "big five" components of personality). For example, temperamental negative emotionality is linked to the personality construct of neuroticism and agreeableness (inversely related), whereas positive affect is associated with agreeableness and extraversion in adults. In addition, aspects of temperament believed to be involved in the regulation of emotionality and emotionally driven behavior have been linked to personality. For example, temperamental inhibition is viewed as connected to adult neuroticism and low levels of extraversion. Moreover, Ahadi and Rothbart (1994) argued that effortful control based in part on temperamental attentional regulation (an aspect of temperament) plays a role in agreeableness, as well as in proneness to anxiety in adolescence and adulthood.

Emotion and Social Behavior

In addition to playing a role in later personality, individual differences in temperamental emotionality frequently have been deemed contributors to variation among children in a range of social behaviors. For example, Thompson (Ch. 2, this Volume) concludes that temperament is related to attachment status to a modest degree. Individual differences in dispositional arousability also have been linked to aggression (see Coie & Dodge, Ch. 12, this Volume) and anger-related reactions (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994). Further, dispositional differences in vicariously induced emotionality (e.g., empathy-related reactions such as sympathy and personal distress) have been correlated with level of prosocial behavior in specific situations and across time (see Eisenberg & Fabes, Ch. 11,

this Volume as irritability expected to include Caspi, Ch. 6, this Volume because research on negative emotionality and strangers' behavior is difficult (see

Dispositional emotionality of social relationships. For individual children's emotional and communication and control (see this Volume) and emotional regulation (see Fabes & Eisenberg, 1993) and these are discussed in Murphy, Cole, & Coie (1993) and this volume as the

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this Volume). In addition, dispositional emotionality, such as irritability, fearfulness, and positive emotionality, are expected to be, and have been related, to level of adjustment, including internalizing and externalizing behavior (see Caspi, Ch. 6, this Volume; Kagan, Ch. 4, this Volume; Rothbart & Bates, Ch. 3, this Volume). Nonetheless, perhaps because researchers generally have not differentiated types of negative emotion, such as fear of novelty versus fear of strangers, prediction of specific internalizing and externalizing problems from temperamental emotionality is still difficult (see Kagan, Ch. 4, this Volume).

Dispositional emotionality also contributes to the quality of social functioning in peer interactions and relationships. However, the relation of social competence to individual differences in valence and intensity of children's emotion only recently has been a focus in empirical and conceptual work (see Eisenberg & Fabes, 1992; Hubbard & Coie, 1994; Rubin, Bukowski, & Parker, Ch. 10, this Volume). For example, it has been hypothesized that emotional reactivity affects social withdrawal (Eisenberg & Fabes, 1992) as well as information processing in social encounters, although there is relatively little research on these issues (see Crick & Dodge, 1994; Eisenberg, Fabes, Murphy, et al., 1995). Researchers have found that cheerful children appear to be relatively popular (Hubbard & Coie, 1994), whereas children prone to intense negative emotions are lower in social status (e.g., Eisenberg et al., 1993; see Rubin et al., Ch. 10, this Volume). As discussed shortly, it is likely that the regulation of emotion, as much as the emotion itself, is related to quality of social behavior in relationships.

Emotion, the Self, and Goals

Emotion is also an integral aspect of conceptions of the self. For example, self-esteem seems to be highly related to feelings of depression and hopelessness (Harter, Ch. 9, this Volume). Moreover, an understanding of emotion is viewed by Harter as affecting the child's construction of the self.

Affect also is viewed as relevant to understanding achievement-related motivation and accomplishments, which, in turn, can be expected to affect aspects of self-esteem. However, emotion is not a primary construct in most of the research and theory in this domain of investigation. Nonetheless, Eccles, Wigfield, and Schiefele (Ch. 15, this Volume) note that some achievement goals are emotional (e.g., obtaining happiness). In any case, success and failure are associated with emotional reactions, level of anxiety can affect performance, and emotion-related self-evaluations

play a role in achievement-related behavior (see Eccles et al., Ch. 15, this Volume). Consistent with an increasing awareness of emotion even in domains of study dominated by cognitive models, Eccles et al. conclude that the highest priority in the research on achievement is closer consideration of the influence of emotion on motivation.

Emotion and Morality

The role of emotion in the study of morality has varied greatly as a function of the conception of morality. In Kohlbergian work on moral reasoning, emotion plays a minor role in comparison to cognition (see Kohlberg, 1984; Rest, 1983). In contrast, emotions such as empathy-related reactions or guilt have been highlighted in some work on moral *behavior*, including theory and research on prosocial tendencies (e.g., Eisenberg & Fabes, 1990, Ch. 11, this Volume; Hoffman, 1982), guilt (Thompson, Ch. 2, this Volume; Zahn-Waxler & Kochanska, 1990), and conscience (Kochanska, 1993, 1996). For example, in work on prosocial behavior, both enduring tendencies toward experiencing moral emotions (i.e., dispositional sympathy) and situational emotional reactions (e.g., situational sympathy or guilt) are viewed as motivating altruistic action (see Eisenberg & Fabes, Ch. 1, this Volume).

Some contemporary theorists, including Wilson (1993) and Shweder (1994), assume an intuitive or biologically based emotional basis to morality (see Turiel, Ch. 13, this Volume). According to Kagan (1984), moral principles are determined by the intensity of the community's affective reactions to the specific content of the principle. Turiel (Ch. 13, this Volume) takes a somewhat more cognitive position than theorists like Hoffman, Kagan, and Shweder, concluding, "As important as are emotions, especially ones of sympathy, empathy, and respect, for moral functioning, emotions occur in and among persons who can think about them with regard to other people and in relation to complicated social agendas, goals, and arrangements. The relationships among emotions, moral judgments, reflections, and deliberations require a great deal of attention in research and in theoretical formulations."

Sex, Gender, and Emotion

As one might expect, there are sex differences in the emotions that boys and girls tend to display (Eisenberg, Martin, & Fabes, 1996; Ruble & Martin, Ch. 14, this Volume), although little is known about the degree to which boys and girls differ in internally experienced emotion (albeit adolescent girls report more depression than do boys; see

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Grotevant, Ch. 16, this Volume). Nonetheless, sex differences in the degree or type of expression of anger and frustration may be a factor in the sex difference in externalizing behavior and aggression in children (see Coie & Dodge, Ch. 12, this Volume). As emotion moves center stage in the examination of many aspects of social functioning, it is likely that sex differences in the experience and expression of emotion will receive more emphasis from researchers.

Emotion in Socialization and the Socialization of Emotion

Socialization is another area in which emotion has received increased attention in recent years. As noted by Parke and Buriel (this volume), affect played a relatively minor role in socialization theories in the recent past. Until the 1980s, affect was discussed primarily in regard to the degree of warmth in the parent-child relationship. In contrast, the topic of affect and emotion permeates contemporary work on socialization.

As discussed by Bugental and Goodnow (Ch. 7, this Volume), emotion plays a central role in both biologically oriented and culturally oriented socialization theories. In biologically based theories, affect and emotion are conceived as primitive processes in need of regulation, as regulators of relationships (e.g., attachment relationships), or as consequences of socializing relationships. Often emotional processes are viewed as functional regulators of other processes central to socialization.

In recent sociocultural perspectives, the expression, experience, interpretation, and naming of emotions are derived from the culture (see Bugental & Goodnow, Ch. 7, this Volume; Kitayama & Markus, 1994; Saarni et al., Ch. 5, this Volume). Thus, socialization by the culture influences emotional reactions, as well as a range of social behaviors. As a consequence of the recent increased awareness of the cultural contributions to emotional experience and expression, a number of our current conceptions of emotional development are likely to be challenged.

Bugental and Goodnow suggest that emotion also affects a variety of cognitive processes fundamental to the socialization process, including attentional focus, memory retrieval, appraisal and response selection, and the capacity for rational or reflective processing (also see Zajonc & Marcus, 1984). Their conception of the role of emotion in socialization is more complex and encompassing than in most existing theory.

At a more concrete, empirical level, the new emphasis on emotion in the socialization process can be found in re-

search on children's reactions to conflict in the family (e.g., Davies & Cummings, 1994; Eisenberg & Fabes, Ch. 11, this Volume); in a focus on the expression of emotion during family members' interactions with one another (see Grotevant, Ch. 16, this Volume); and in the emerging body of research on the socialization of children's expression and regulation of emotion and its relation to social competence (Dunn & Brown, 1994; Eisenberg & Fabes, Ch. 11, this Volume; Parke & Buriel, Ch. 8, this Volume). For example, there is some evidence that quantity or quality of expressiveness in the family is related to peer competence (e.g., Boyum & Parke, 1995; Parke & Buriel, Ch. 8, this Volume) and positive social reactions such as sympathy (e.g., Eisenberg et al., 1992; Eisenberg & Fabes, Ch. 11, this Volume). Moreover, emotion has been used as a moderator variable in examining socialization issues such as compliance and the development of internalized standards; for example, individual differences in emotionality (e.g., proneness to anxiety) have been found to affect the degree to which parental socialization practices such as reasoning are effective (Kochanska, 1993, 1996).

In summary, the topic of emotion has moved to center stage in the study of social and personality development. This surge of interest in emotion has been accompanied by, and perhaps is related causally to, elevated interest in biological inputs to development and individual differences in personality and temperament. In addition, contemporary concern with culture and context has had a powerful influence on thinking about emotional development. Moreover, because emotional experience and expression involve regulation (or the lack thereof), contemporary discussion and research on emotion regulation also has been revitalized.

A Focus on Regulation

In the past, popular approaches to the topic of regulation included emphases on parental control and discipline; children's compliance, delay of gratification, and resistance to temptation; and children's internalization of societal values regarding behaviors such as aggression and prosocial behavior (e.g., Hoffman, 1970, 1983; Maccoby & Martin, 1983; see Coie & Dodge, Ch. 12, this Volume; Eisenberg & Fabes, Ch. 11, this Volume). Although there is still considerable interest in these topics, in recent years investigators concerned with regulatory processes also have focused on mechanisms by which children regulate their emotion and emotion-driven behavior, and the relation of individual differences in regulation to social competence and adjustment.

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Contemporary Work on Regulation

Contemporary work on the aforementioned topics has diverse origins in the discipline. The work of the Blocks (Block & Block, 1980) on ego control has had an important impact on this topic of study. Also important is recent work by temperament theorists who, in the past decade or so, have emphasized constructs such as attentional control (e.g., the ability to shift and focus attention), behavioral inhibition, impulsivity, and effortful control (superordinate self-regulatory systems that can assert control over the reactive and self-regulatory processes of other temperament systems; Ahadi & Rothbart, 1994; Rothbart & Ahadi, 1994). Similarly, mechanisms for adaptation discussed by coping theorists (e.g., Carver, Scheier, & Weintraub, 1989; Lazarus & Folkman, 1984) for over a decade can be viewed as modes of dealing with, or regulating, emotion and behavior in stressful contexts. In addition, some of the adult personality work on constructs such as constraint (Tellegen, 1985), persistence (Caspi, Ch. 6, this Volume), and inhibition control (Derryberry & Rothbart, 1988), as well as social psychological work on strategies for manipulating one's own mood (e.g., Erber, Wegner, & Therriault, 1996), have influenced developmentalists interested in regulatory processes.

Regulation is discussed, in one form or another, in most of the chapters in this volume. For example, Kagan examines the possible role of physiological systems and processes in regulation. Relatedly, Rothbart and Bates review parts of the growing literature pertaining to temperamental bases of regulation and the relations of temperamental regulation to social and emotional functioning. Caspi notes that constraint is a component of all contemporary systems of personality, and highlights the role of regulation in adjustment and criminality. Saarni et al. focus on social communicative mechanisms used by infants to regulate their behavior (e.g., social referencing), as well as on the development of children's ability to regulate the expression of emotion. Consistent with the conclusions of Rothbart and Bates and Caspi, Coie, and Dodge note the association of children's aggression with attentional deficits and impulsivity, particularly when combined with parent-child interactions that are coercive or disciplinary practices that are inconsistent but often punitive. Similarly, Eisenberg and Fabes report findings consistent with the view that regulatory processes are intimately involved in the vicariously induced emotions of sympathy and personal distress, as well as in the performance of prosocial behavior. Further, Eccles et al. briefly consider the issue of how motivation gets translated into regulated behavior

and note the importance of regulation in the achievement of goals and learning (Zimmerman, 1996).

Bugental and Goodnow, Parke and Buriel, Coie and Dodge, and Grotevant focus, to varying degrees, on socialization correlates of the development of regulated behavior. For example, Bugental and Goodnow discuss alternative pathways to autonomous regulation in children and argue that regulation based on fear (e.g., fear of punishment) results in very limited autonomous regulation (also see Eisenberg & Fabes, Parke & Buriel, Chs. 1 and 8, this Volume). They suggest that more productive mechanisms for inducing autonomous regulation include (a) provision of knowledge (which eventually leads to automatic action) through procedures, scripts, and behavioral routines; (b) assisted mental simulation (e.g., through reasoning); and (c) parental management and social scaffolding, by which parents orchestrate and arrange the variety and types of the child's experiences. Although the use of assisted mental simulation through reasoning was emphasized as a valuable socialization procedure over 25 years ago (e.g., Hoffman, 1970), the current focus on subtle socialization-relevant processes such as scaffolding and involvement in behavioral scripts is in striking contrast to the primary focus in the socialization literature of the past on level of parent control (Maccoby & Martin, 1983). The current focus on attachment relationships as a context for the development of emotion regulation (e.g., Bridges & Grolnick, 1995; Cassidy, 1994) is another exciting development in the area of emotional regulation (see "A Focus on Relationships" below).

The Development of Emotion-Related Regulation

Based on the literature reviewed in various chapters (e.g., the chapters of Bugental & Goodnow, Saarni et al., and Thompson), several developmental trends in emotion-related regulation are evident (also see Eisenberg, 1997; Thompson, 1994; Walden & Smith, in press). First, with increasing age in early infancy and childhood, regulation of emotion and behavior is shifted gradually from external sources in the social world (e.g., socializers) to self-initiated, internal (i.e., child-based) resources. Caregivers soothe young children, manage young children's emotion by selecting the situations they are in, and provide children with information (e.g., facial cues, narratives) to help the child interpret events. With age and cognitive development, children are better able to manage emotion themselves. Second, mentalistic strategies for emotion regulation, such as thinking about situations in a positive light, cognitive avoidance, and shifting and focusing attention, increase

with age. The use of such strategies is probably facilitated by the development of children's understanding of emotion, including the factors that elicit, maintain, and modulate emotion, as well as other cognitive advances and physical changes. Third, with greater maturity, children develop greater capacity to modulate the course of their emotional arousal, for example, the intensity and duration of arousal, an ability that would be expected to have dramatic effects on behavior (e.g., aggression, venting of emotion, emotional expression). Fourth, with age, individuals likely become more adept at selecting, managing, and construing situations and relationships in a manner that minimizes the need to deal with negative emotions and stress (Carstensen, 1991). Fifth, the ability to match strategies with the nature of stressors appears to improve with development. Thus, children improve in the ability to select appropriate coping solutions for everyday problems (Berg, 1989). Moreover, children appear to become better at distinguishing between stressors that can be controlled and those that cannot, and at choosing the most effective strategies for these stressors (e.g., emotion-management strategies such as blunting or cognitive distraction in uncontrollable contexts; Altshuler, Genevro, Ruble, & Bornstein, 1995; Bull & Drotar, 1991; Hoffner, 1993).

Types of Regulation

In the literature on regulation of emotion, distinctions among various types of regulation frequently are ignored or blurred. However, it is useful to differentiate among three types of regulation when considering both development course and potential outcomes: regulation of emotion, regulation of emotion-related behavior, and regulation of the context itself. These differentiations are not always made in discussions of regulation in this volume, but they are useful for organizing the findings on regulation.

Emotion regulation can be defined as the process of initiating, sustaining, modulating, or changing the occurrence, intensity, or duration of internal feeling states and emotion-related physiological processes (see Brenner & Salovey, 1997; Thompson, 1994). Detailed discussion appears in the writings of temperament theorists who define regulation primarily in terms of modulating internal reactivity. In this work, emotion regulation frequently is operationalized as attentional processes such as shifting and focusing attention as needed (Ahadi & Rothbart, 1994; Derryberry & Rothbart, 1988; Windle & Lerner, 1986). Further, as noted previously, processes such as cognitive distraction and positive cognitive restructuring of a situation involve attentional

processes and are part of most conceptual frameworks in the coping literature. For example, Lazarus and Folkman (1984) considered emotion-focused coping—efforts to reduce emotional distress in contexts appraised as taxing or exceeding the resources of the individual—to be a major category of coping responses. As noted by Rothbart and Bates (Ch. 3, this Volume), attentional control is an aspect of temperament that predicts high-quality social functioning (also see Saarni et al., Ch. 5; Thompson, Ch. 2, this Volume, for discussion of emotion regulation).

Emotion regulation pertains to regulation of internal experience and physiological states. While emotion is aroused or experienced, it is often expressed in facial or bodily reactions, or through behaviors such as venting of emotion (yelling, crying) or aggression. Regulation of emotionally driven behavior, the second type of regulation, has not played a major role in most systems of temperament (Prior, 1992), although some temperament theorists have assessed behavioral inhibition and impulsivity (e.g., Ahadi & Rothbart, 1994; also see Gray, 1987). In addition, clinical, developmental, prevention, and personality theorists frequently have highlighted constructs such as behavioral inhibition, self-regulation, constraint, and ego control, which involve the ability to modulate the behavioral expression of impulses and feelings (Block & Block, 1980; Kochanska, 1993; Kopp, 1982; Sandler, Tein, & West, 1994; Tellegen, 1985). Literature relevant to behavioral regulation is reviewed in several chapters in this volume (e.g., Caspi; Coie & Dodge; Rothbart & Bates; Saarni et al.).

The third type of regulation—managing or regulating the stressful situation that elicited the emotional arousal—has been discussed primarily by coping theorists, who view problem-focused coping (efforts to modify the source of the problem) as an important type of coping (Lazarus & Folkman, 1984). This type of regulation generally includes planning and direct problem solving or instrumental coping and readily could be expanded to include proactive management of situations to reduce subsequent stress and negative emotion (Carstensen, 1991; Thompson, 1994; see below). As noted previously, when children are young, parents often manage situations for them, but with age children increasingly are expected to manage situations themselves as they acquire relevant cognitive and social capacities.

A related type of regulation relevant to emotion is niche picking—that is, behaviors that act to control exposure to various aspects of the environment related to emotional experience (Aspinwall & Taylor, 1997; Carstensen, 1991; Thompson, 1994). An example is when socially anxious

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individuals choose not to attend social events that elicit discomfort. Although niche-picking obviously is an important method of regulating emotional experience, few investigators have studied its use by children.

Appropriate regulation depends, in part, on the particular context. Effective emotion-related regulation is viewed as flexible and relevant to one's goals (Cole, Michel, & Teti, 1994; Eisenberg & Fabes, 1992). For example, appropriate expression of emotion depends on the situation and a person skilled in regulation adjusts his or her behavior accordingly. Moreover, it is important to differentiate between regulation and how it is measured. If regulation is operationalized as control or inhibition of behavior, particularly high levels are likely to be maladaptive (Block & Block, 1980). For example, some children appear to be highly inhibited temperamentally; these children are prone to fears, negative affect, avoidant behavior, and social withdrawal (Kagan, Snidman, & Arcus, 1992; see Kagan, Ch. 4, this Volume), and are more likely than other children to develop anxiety disorders in adulthood (Rosenbaum et al., 1993). Moreover, a moderate degree of behavioral control has been linked to children's resiliency, with the latter defined as resourcefulness in coping and rebounding from stress (Eisenberg et al., 1997). No doubt, the degree to which behavioral inhibition is adaptive and appropriate varies with the context.

Arousability and regulation obviously are interrelated. The individual's emotional reactivity, both at a dispositional level and in specific contexts, may influence the style that characterizes his or her coping/regulation and vice versa (Compas, 1987). However, these two constructs are distinctive and may be associated in a variety of ways. For example, some people who are relatively emotionally reactive seem to exhibit behavioral inhibition in response to a stressful stimulus (see Kagan, Ch. 4, this Volume), whereas others seem to become undercontrolled in their behavior (Block & Block, 1980; Pulkkinen, 1982; see Eisenberg & Fabes, 1992). Furthermore, the emotions associated with under- and overcontrol may differ somewhat. For instance, hostility or irritation over frustration appears to be associated particularly with underregulation, whereas overcontrolled people often are anxious or fearful about discrepancies (e.g., Bates, Bayles, Bennett, Ridge, & Brown, 1991; Rubin, Chen, & Hymel, 1993; see Kagan, Ch. 4, this Volume; Rothbart & Bates, Ch. 3, this Volume), although some undercontrolled children evidence relatively high levels of anxiety (Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996).

One important reason for differentiating among different types of regulation is that they may be combined in various ways that seem to be associated with different types of behavior in children (Eisenberg & Fabes, 1992). Some individuals who can be labeled highly inhibited are high in behavioral inhibition (behavioral overcontrol) but seem to be low in emotional or situational regulation. These include the highly inhibited children discussed by Kagan (Ch. 4, this Volume) who are prone to certain types of negative emotion (e.g., fear of discrepancy), are low in some markers of physiological regulation (e.g., vagal tone), and tend to withdraw rather than manage stressful situations. A second group of people are those who are underregulated—who likely are low in all three types of regulation. These individuals appear to be prone to externalizing types of problems, including criminal behavior (see Caspi, Ch. 6, this Volume; Rothbart & Bates, Ch. 3, this Volume). A third group is people who are relatively high in the ability to regulate emotions, emotionally driven behavior, and stressful situations. Such people are not *extremely* high, however, in behavioral control (i.e., behavioral inhibition). People relatively high in all three types of regulation appear to be well adjusted and socially competent (e.g., Eisenberg et al., 1993, 1996; Rothbart & Bates, Ch. 3, this Volume); Eisenberg and Fabes (1992) argued that this group is optimally regulated and likely to be resilient because they can choose from a variety of modes of regulation that which fits a given situation. Caspi (Ch. 6, this Volume) does not explicitly discuss the configuration of types of regulation contributing to each of these three heuristic categories of people, but he notes that groups of resilient, overcontrolled, and undercontrolled children similar to those described above have been differentiated in several studies (e.g., Robins et al., 1996).

Although not all individuals fit into these heuristic groupings, conceptualizing regulation in this multidimensional manner appears to have some potential for predicting adjustment and social competence (Caspi, Ch. 6, this Volume; Eisenberg & Fabes, 1992; Robins et al., 1996). Moreover, it is useful to consider the possibility that the effects of various kinds of regulation are moderated by individual differences in emotionality. For example, people who are underregulated would be expected to exhibit more reactive (i.e., emotionally driven) aggression and lower quality social skills if they also are prone to intense negative emotions (although some overcontrolled individuals occasionally lose control and engage in extremely violent actions; Baron & Richardson, 1994). This is because underregulated people

would be relatively likely to have difficulty modulating their negative emotion (see Caspi et al., 1995; Derryberry & Rothbart, 1988; Eisenberg et al., 1996). Initial evidence for these predictions has been obtained (see Eisenberg, Fabes, Guthrie, et al., 1996). This is one example of the usefulness of considering moderating variables, a topic I return to later.

In summary, a recent theme in the developmental literature has been on multidimensional, emotion-related conceptions of regulation. This work is a natural accompaniment to the current emphasis on emotion and temperament, as well as the concern with adjustment, stress, and coping in the larger domain of psychology.

A Focus on Cognition

Another trend in developmental psychology in recent years has been increased interfacing of work on cognition with theory and empirical research on emotion and social behavior. Cognition plays an obvious and fundamental role in most aspects of emotional and social functioning. Saarni et al. (Ch. 5, this Volume) provide many examples of how cognitive advances in infancy and early childhood are reflected in emotion-related capabilities. For example, they note a number of competencies the child needs to undertake effective emotional communication, including (a) awareness of one's own emotional state; (b) awareness of others' emotional states; (c) skillfulness with one's subculture's emotion concepts and lexicon, including pragmatic use of subcultural emotional scripts in which emotional reactions are integrated with other social rules; (d) sympathetic responsiveness to other people's emotional distress; and (e) practical knowledge of how to use emotional expressiveness strategically in social contexts. Furthermore, the abilities to comprehend and take into account unique information about others' internal states (intentions, emotions, motivations, cognitions), to analyze elements of a social context and the consequences of various modes of action, and to devise appropriate cognitive strategies is fundamental to sensitive social interaction in relationships, management of aggressive impulses, and altruistic behavior (Coie & Dodge, Eisenberg & Fabes, Rubin et al., this Volume).

In addition, conceptions of the self are in large part cognitive constructions, although they also are imbued with emotion (Harter, Ch. 9, this Volume). In fact, Harter argues that developmental achievements in understanding others' behaviors and cognitions (e.g., how others view the self), as well as emotional processes, underlie age-related changes in self-conceptions (see Thompson, Ch. 2, this Volume).

In his chapter on moral development, Turiel (Ch. 13, this Volume) discusses a range of ways in which cognitions are integral in moral thinking. For example, cognition obviously is critical for differentiating moral from nonmoral (e.g., conventional and personal) concerns, in constructing conceptions about morality, in analyzing information about elements in a specific morally relevant situation, and in making morally relevant decisions based on situational information and values, beliefs, and goals. As is obvious from the passage from Turiel's chapter quoted earlier, he argues that cognition is at least as important (and probably more important) in moral development as is emotion.

In his discussion of early socioemotional development, Thompson (Ch. 2, this Volume) reviews some of the ways in which young children's working models of attachment figures and relationships are modified with the growth of children's understanding of psychological processes (e.g., as evident in work on the theory of mind). Individuals' working models of relationships, which have a cognitive as well as an affective component, are expected to influence relationships not only in childhood (see Rubin et al., Ch. 10, this Volume), but later in life (Main, Kaplan, & Cassidy, 1985). In addition, although Grotevant (Ch. 16, this Volume) does not focus in detail on cognitive development in adolescence, he notes the importance of self-perceptions, internal working models of relationships, and changes in reasoning ability for development during this period of life.

The role of cognition in the motivation to succeed has been a topic of considerable discussion. Eccles et al. (Ch. 15, this Volume) organize their review of theory and research on the motivation to succeed around three broad questions: Can I do this task? Do I want to do this task and why? and What do I need to do to succeed on this task? It is obvious that cognition is central to assessing and dealing with all of these questions, although, of course, emotion also plays a critical role in achievement motivation. As an example of how cognitions affect the motivation to succeed, Eccles et al. review literature concerning the ways in which children's understanding of competence-related constructs (e.g., ability, effort, task difficulty) affect motivation.

Interest in cognitive processes as explanatory mechanisms in socialization has changed markedly in recent years. In the past two decades, social learning theory accounts of socialization have become much more cognitive in orientation; in addition, cognitive constructs from the cognitive sciences and social psychology have been assimilated into developmental conceptions of socialization. In their chapter, Bugental and Goodnow (Ch. 7, this Volume)

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argue that socialization interactions are organized by the ways experiences are represented at a cognitive level. Cognitions often mediate or moderate socialization processes, and cognitive processes involved in socialization may be deliberate and reflective or relatively automatic. Bugental and Goodnow review numerous examples of the ways cognitive functions feed into or fuel the socialization process, including the roles of information-processing abilities, cognitive biases, appraisal processes, and cognitive scripts in socialization. For example, socialization procedures involving the provision of scripts and behavioral routines, assisted mental simulation, and parental scaffolding are likely to produce socialization outcomes in part through their effects on shaping children's cognitive schemata. Moreover, socialization is achieved partly through caregivers' influence on the development of children's conceptions of relationships, and parents' beliefs about children likely are influenced by their own working models of relationships. Like Bugental and Goodnow, Parke and Buriel (Ch. 8, this Volume) suggest that the ways parents perceive, organize, and understand their children's behaviors and beliefs are critical for appreciating how parent-child relationships are regulated and change.

Finally, cognitive perspectives such as cognitive developmental theory and schema-based models are important in contemporary work on gender issues. Among the most fundamental issues in the study of gender are the role of cognition in gender-typed behavior, the development of an understanding of gender-relevant constructs early in life, and the role of social factors in children's gender-relevant cognitions. The current focus on cognition has contributed to models of gender development in which the child's conceptions play a significant role in his or her own development (see Ruble & Martin, Ch. 14, this Volume).

In brief, cognitive processes of many sorts are being integrated into theory and research on diverse aspects of social and emotional development. This trend has resulted in richer conceptualizations of children and their social and emotional development, as well as of the socialization process.

A Focus on Contextual and Environmental Inputs to Development

Investigation of social and emotional development is becoming more differentiated and sophisticated in its conception of the social context. This change in the field is based, in part, on Bronfenbrenner's (1979, 1986) early efforts to

increase the field's awareness of the various levels of the child's social ecology and the need to consider the interaction between the larger social world (e.g., the neighborhood and culture) and the family and individual. Similarly, life span psychologists have heightened our awareness of the interplay of historical, cultural, biological, and psychological influences on behavior (Baltes, Lindenberger, & Staudinger, Volume 1; Baltes, Reese, & Lipsitt, 1980; Caspi, Ch. 6, this Volume). From a life span perspective, changes in the individual's social context across the life span interact with the individual's unique history of experiences, roles, and biology to produce an individualized developmental pathway. Further, increased interest in individual differences in personality and social functioning sometimes has contributed to a focus on context as a possible explanation for these differences.

Diversity

One manifestation of current interest in the context of development is the recent emphasis in the discipline on recognizing and examining diversity. This trend is consistent with the life span emphasis on individual variation in developmental trajectories.

An emphasis on diversity can refer to a host of differences among people that are correlated with different life experiences: differences in sex and masculinity/femininity, in culture, in subcultural experiences, in socioeconomic status and associated living conditions, and in the composition and structure of families. For years, many developmentalists have acknowledged that research on differences among various groups (e.g., cultures or subcultures) is valuable in helping to delineate factors that influence diverse courses of development. However, we are finally moving beyond the point of solely identifying differences *between* groups in particular variables.

Of particular importance, developmentalists are acknowledging the value of studying differences in *processes* of development in different groups. Often in the past, the implicit assumption has been that the causes of development were similar or identical across groups but that various groups differed in degree of their exposure to various causal agents or in biological predispositions. Thus, gender, ethnicity, and other group-level variables were considered unwanted error variance and often were treated as control variables: nonpsychological and nonbehavioral variables of little interest. Investigators are finding that contributors to development, and the configuration and operation of influential factors, sometimes vary in different contexts and for

different groups. Examples are provided later in the section on moderation effects.

Types and Examples of Contextual Influence

The importance of the various types of contextual influences on social and emotional development is evident in many of the chapters in this volume. Consistent with past *Handbook* chapters on socialization, Parke and Buriel (Ch. 8, this Volume) review in some detail the relations of aspects of the proximal familial context (e.g., parental socialization-related practices and cognitions) to social, personality, and emotional development. This ongoing interest in the role of the proximal family environment also is reflected in a number of other chapters, such as those focused on aggression (Coie & Dodge, Ch. 12, this Volume), prosocial development (Eisenberg & Fabes, Ch. 11, this Volume), peer relationships (Rubin et al., Ch. 10, this Volume), and adolescence (Grotevant, Ch. 16, this Volume).

However, the Parke and Buriel chapter, Bugental and Goodnow's chapter on socialization processes, and, to some degree, a number of other chapters include content pertaining to other aspects of context. These include family structure and organization (e.g., as tapped by parental employment status, marital status, and number of parents in the home) and subcultural and cultural factors. Although research on socialization in minority families and communities is still quite limited in quantity, such work has been assigned new importance in the past decade (see Parke & Buriel, Ch. 8, this Volume). Developmentalists are realizing that the values, socialization goals, and strategies in ethnic minority families may differ in important ways from those in the majority culture. Moreover, there are unique issues and challenges in regard to socialization and development in contexts where children must interact effectively in two cultures (i.e., the cultures of the minority and majority groups), cultures that often conflict in particular values and expectations. Similarly, the context of poverty—a situation in which increasing numbers of families are finding themselves—is a topic of growing interest in the developmental community (see Parke & Buriel, Ch. 8, this Volume; McLoyd, Volume 4).

Investigators with a social-cultural perspective are particularly likely to underscore the significance of the larger social context, comprised not only of ethnic and cultural groups but also of age, gender, work, religious, and national groups (see Bugental & Goodnow, Ch. 7, this Volume). From this perspective, socialization is a lifelong activity that is focused around becoming or remaining a member of

one or more groups. Thus, much of socialization is learning shared practices and meanings in a particular cultural, social, and historical context. This perspective can be viewed as contributing to the theoretical background for contemporary interest in folk theories (e.g., Saarni et al., Ch. 5, this Volume), family rituals and myths (Parke & Buriel, Ch. 8, this Volume), scripts about daily patterns of living (Grotevant, Ch. 16, this Volume), and the construction of self-relevant scripts in social interactions in infancy and childhood (Harter, Ch. 9, this Volume).

Although cultural anthropology for a long time has had some influence on developmental psychology (e.g., Whiting & Whiting, 1975), interest in the role of culture in psychological development has increased in the past decade, particularly in regard to the study of emotion, the self, and moral development (e.g., Goodnow, Miller, & Kessel, 1995; Kitayama & Markus, 1994). As one example, Saarni et al. (Ch. 5, this Volume) propose that culture plays a role in the construction of the meaning of events that can elicit emotion (e.g., in emotion-relevant appraisals of events and others' behaviors and reactions) and in rendering some emotional responses more probable than others. Culture also influences how members of a society regulate and express emotion through a transactional process. Specifically, culture determines what one notices in the feedback from the body; affects communication patterns and, hence, socially induced affect; determines one's role in society and, hence, emotional experiences that are associated with roles; and influences the selection and expression of emotional responses. This view of emotion is in striking contrast to the perspective that emotional expression and feeling are strongly rooted in biology and that many or most emotion-related processes are universal.

Given the links among emotion, perceptions of the self, and relationships (Harter, Ch. 9, this Volume; Thompson, Ch. 2, this Volume), it is not surprising that contemporary theorists also expect culture to play a role in the development of the self. Harter (Ch. 9, this Volume) notes that the Western view of self may differ in important ways from that in cultures in which self-definition is deeply embedded in social relationships and obligations. This proposition is consistent with the contemporary argument that people in different cultures have strikingly different construals of the self due to cultural differences in concepts of individuality (Markus & Kitayama, 1991). In some cultures (e.g., many Asian cultures), the self is viewed as interdependent and there is emphasis on attending to others, fitting in, and harmony with others. In contrast, in many

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Western cultures, independence from others rather than overt connectedness is valued. Although there may be more diversity within sociocentric groups in regard to an emphasis on individualism than sometimes is acknowledged (Turiel, Ch. 13, this Volume), it appears that there is marked variation across cultures in normative self-conceptions. This variation probably is reflected in processes underlying the development of self-perceptions early in life.

The role of culture is much more prominent in Turiel's (Ch. 13, this Volume) chapter on moral development than it was in the analogous chapter on this topic in the last edition of the *Handbook* (Rest, 1983). Although coming from a predominantly cognitive perspective, Turiel notes the dynamic interplay among various personal and social (including cultural) goals in moral development. He also acknowledges that social reasoning is flexible and takes into account different and varied aspects of the social world. In discussing contrasting perspectives on cross-cultural findings, Turiel makes the point that differences in assumptions about reality (e.g., assumptions about practices that are harmful to the dead) and in informational assumptions (e.g., in regard to the expected effects of physical punishment on children) are important to consider when interpreting cultural differences in moral and social conventional reasoning. As is evident in Turiel's chapter, there is disagreement in the field in regard to the interpretation of some cross-cultural differences in reasoning about moral and social conventional issues, with Turiel viewing moral development as being more similar across cultures than do most cultural psychologists (e.g., Shweder, Mahapatra, & Miller, 1987). However, Turiel emphasizes another aspect of context more than do most cultural psychologists; he argues that a focus on contextual variations between cultures has led to little consideration of variations in moral reasoning associated with contextual differences within cultures. Turiel and his colleagues' work (e.g., Wainryb, 1993) on diversity of perspectives within cultures stemming from factors such as gender roles and status hierarchies is an important direction for research on moral development.

The emphasis on different groups within a society as different socialization contexts is echoed in recent work on the separate cultures of girls and boys (Maccoby, 1990). Segregation by sex in childhood seems to be a universal phenomenon, although it varies to some degree with variables such as the availability of same-sex peers and opportunities to choose one's associates (Ruble & Martin, Ch. 14, this Volume). Within sex-segregated groups, girls and boys appear to develop different styles of interaction,

goals, and values. These subcultural differences likely have substantial and long-term implications for social, emotional, and personality development.

Also evident in this volume of the *Handbook* is the increased recognition in recent decades of connections between and among contexts within a society, for example, among family, school, and peer cultures (e.g., chapters by Coie & Dodge; Eccles et al.; Grotevant; Parke & Buriel; Rubin et al.). However, these connections are seldom examined in empirical study of development and in theory, or acknowledged in the real world (e.g., there often is little communication between schools and parents). Culture doubtlessly has important effects on the nature of the connections across settings within a culture; for example, the links between parents and schools may be stronger in majority culture families than for certain minority groups. However, few researchers have actually measured the role of subcultures in the forging (or inhibiting) of connections across settings within cultures.

A Focus on Biological Perspectives

There can be little doubt that there has been a resurgence of interest in individual differences, as well as in the biological and constitutional bases of individual differences. Plomin (1994) noted that 78% of the text pages in the 1983 *Handbook of Child Psychology* were devoted predominantly (more than half the pages) to normative or group difference approaches. Although no one has yet conducted a page count for this edition, it is clear that individual differences are a major focus of attention in this volume of the *Handbook*. In fact, in at least three of the chapters in this Volume, constitutionally based individual differences are the primary focus (i.e., Caspi; Kagan; Rothbart & Bates).

The current focus on constitutionally based individual differences is not unprecedented. After a period of heavy reliance on biological explanations of social behavior earlier in this century, biological perspectives appeared to go out of fashion in developmental and social psychology. Behaviorism and then social learning perspectives became more popular during the middle half of the century, whereas biologically based explanations of social behavior and personality were de-emphasized. In the past one or two decades, the pendulum has swung back once more.

Biology and Socioemotional Development

The discussion of the role of biological/constitutional factors in social, emotional, and personality development

often has been heated (e.g., in response to Baumrind, 1993; Jackson, 1993; Scarr, 1992). This is not surprising because biological explanations of cognitive and social development have been used to argue for biological determinism and, consequently, can have devastating psychological, social, and policy effects. It also is true, however, that much contemporary work on the biological bases of behavior and emotion is based on complex frameworks that posit interconnected causal roles of biological/constitutional and environmental factors in human functioning. This complex view of the role of biology in development is, in general, reflected in the chapters in this volume.

For example, Bugental and Goodnow (Ch. 7, this Volume) depict development as the result of a dynamic coregulation of aspects of the individual (from neural to behavioral) and the environment (from physical to social). The emergence of structure in both people and their environments results from a process of mutual influence and regulation. They present literature consistent with the view that children are biologically prepared for socialization, and argue that biologically based differences in children (e.g., in temperament, physical attractiveness) elicit different socialization experiences from the environment. Similarly, biological factors that affect parenting are discussed, with a recognition that biologically influenced parental characteristics are played out in a social context. They further argue, using an evolutionary perspective, that humans may be designed for preferential receptivity to proximity maintenance with specific others in the presence of distress (e.g., attachments), for the use and recognition of signals denoting power or dominance, for differentiating between in-groups and out-groups in social life, and for the reciprocal obligations associated with communal life. These biological predispositions are viewed as emerging in a social context and, as was discussed previously, Bugental and Goodnow emphasize cultural factors as well as situational cognitive and emotional mediators and moderators of the socialization processes. Thus, Bugental and Goodnow view socialization in a complex process-oriented manner, influenced by the ongoing interaction of biological and environmental factors.

As is evident in Ruble and Martin's chapter (Ch. 14, this Volume) on gender development, recent interest in biological approaches, especially the influence of hormones on behavior, also is a force in the work on gender. Ruble and Martin note that the nature/nurture controversy is a central issue in gender development and is reflected in work on the development of sexual orientation, gender identity, and sex

differences. Ruble and Martin emphasize that, in some cases, the effects of biological factors may be relatively easy to modify (and that the effects of environmental factors are not always easy to reverse or modify). In their view, biological and environmental factors interact in complex ways and cannot be separated in a simple manner; for example, behavior may influence hormones as well as the reverse. Ruble and Martin suggest that given the current state of theoretical development, biological approaches are more useful in terms of explaining sex differences and differences among people of the same sex than for explaining developmental changes in gender typing or situational variability.

In their chapter on aggression, Coie and Dodge (Ch. 12, this Volume) provide an example of how biological and environmental factors may jointly produce the observed sex difference in aggression. They suggest that boys' impulsivity (e.g., grabbing behavior), which probably is partly biologically mediated, may account for boys' frequent involvement in struggles over possessions as toddlers, which can then lead to later aggressive acts. However, Coie and Dodge also argue that there is little evidence for a link between genetics and physical aggression in adulthood, and that genetic differences in antisocial behavior cannot be used to explain violence in urban America because rapid secular changes in rates of violence are not consistent with genetic explanations.

Similar to Coie and Dodge (Ch. 12, this Volume), Eisenberg and Fabes (Ch. 11, this Volume) view genetic factors as contributing to both the development of prosocial and empathy-related responding in the species and to individual differences in aspects of emotionality and regulation (e.g., attentional regulation) that contribute to prosocial behavior and empathy in childhood. However, also consistent with Coie and Dodge, they do not view heredity as a major factor accounting for individual differences in prosocial behavior in childhood and adulthood, but as one that contributes to prosocial development in subtle ways (e.g., by affecting temperamental emotionality).

Biology, Temperament, and Personality

Kagan (Ch. 4, this Volume) focuses on physiological processes that play a role in temperament and social behavior. For example, he discusses cerebral asymmetry and its association with behavioral inhibition, other physiological correlates of inhibited and uninhibited behavior, and the relation of neurochemical systems in the brain to mood and action. He argues that genes make a modest contribution to

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individual differences in reactivity and inhibition, but that they are not omnipotent and always share power with experiential factors. As an example, Kagan notes the possibility that an infant born with a physiological tendency toward high reactivity and fearfulness, but who is in a supportive environment and experiences no major uncertainties, might undergo changes in those brain circuits that mediate emotional reactivity and, consequently, become minimally distressed.

A central focus in Kagan's chapter is on inhibited versus uninhibited behavior and its correlates. Such behavior is one aspect of temperament; Rothbart and Bates (Ch. 3, this Volume) provide a review of numerous other aspects of temperament. It is often assumed that the assertion that a behavior has a temperamental basis means that it is inherited, but current definitions of temperament are more complex. Rothbart and Bates define temperament as "constitutionally based individual differences in reactivity and self-regulation. . . . The term *constitutional* stresses the biological bases of temperament, influenced by genetic inheritance, maturation, and experience." Thus, temperament is influenced not only by inheritance, but by environmental factors that affect an individual's biological being (e.g., trauma or drugs) and by the social context.

Similarly, Caspi (Ch. 6, this Volume) defines temperament as stylistic differences among people—differences that appear early in life, show substantial stability over time, represent predictable modes of response (although they may require particular environmental elicitors), and possibly have fairly direct neurobiological correlates (adapted from Rutter, 1987; similar to Buss & Plomin, 1984). Adult personality traits are viewed as the social and cognitive elaborations of temperament. Caspi assumes that genetic factors play an important role in temperament and personality; however, based on the behavioral genetics literature, he also assumes that nonshared environmental influences (environmental factors that are not shared by twins or siblings) account for substantial variation in temperament. Further, Caspi delineates ways in which both genetic and environmental influences change with age, the different ways in which personal and environmental variables interact, and what types of environmental factors are most likely to create change (i.e., discontinuity) in personality.

Caspi reviews the pattern of findings in the behavioral genetics literature and concludes that there is relatively little evidence of shared environmental influences on personality (i.e., factors that have the same influence on children in the same family). He further notes that environmental

influences often are genetically mediated in behavioral genetics studies. Such conclusions accurately reflect the behavioral genetics literature; however, interpretation of the empirical data depends on how the data are framed.

A Caveat

Work in behavioral genetics has contributed greatly to an understanding of the biological bases of behavior and is an important antidote to the view that everything is solely environmental. However, there are several limitations of the analyses used by behavioral geneticists and some of the typical conclusions found in the literature. Nothing discussed in this section is new (Baumrind, 1993; Hoffman, 1991; Lerner & von Eye, 1992; Wachs, 1993); however, given the strong emphasis on genetics in some chapters in this volume, some representation of alternative views is appropriate. Thus, some of the criticisms of the findings of behavioral geneticists and their interpretations are briefly summarized below.

First, in behavioral genetics analyses, one is forced to partition variance to genetic and shared or unshared environmental causes; proportions of the three must add up to 1. In reality, genetic and environmental factors often are inextricably intertwined and co-vary. Unfortunately, when this is the case, environmental effects tend to be labeled as genetic when, in fact, the environment plays a crucial role (McCall, 1994). In the standard statistical analyses, environment often is estimated as residual variance (depending on the analysis; Plomin, 1986; Wachs, 1993), although in some analyses, estimates of both genetic and environmental contributions are overestimated (e.g., in studies of comparisons of correlations in adoptive and nonadoptive families; Plomin, 1986). Moreover, in most behavioral genetics studies, the environment is not measured; it is assessed mainly on the basis of similarities and differences between siblings (e.g., monozygotic versus dizygotic twins or biologically related versus unrelated siblings). This may not be an adequate approach.

In addition, because the statistical techniques used in the field have, in general, been designed and used to examine only the main effects of genetic and environmental influences, the terminology and thinking based on these models often, albeit not always, have been limited to relatively simplistic conceptions of the environment and its relation to genetic factors (see Cardon & Cherny, 1994; Rowe & Waldman, 1993, for discussion of some newer techniques). In the real world, it is doubtful that genetics and environmental influences function only as main effects;

interaction effects are undoubtedly very influential. For example, Cadoret, Yates, Troughton, Woodworth, and Stewart (1995) found that for adopted children who were at genetic risk for antisocial behavior, the quality of adoptive parents' support mattered for predicting aggressive, antisocial behavior. In contrast, Cadoret et al. found little effect of support for those children who were free of the genetic risk factors.

The recent work by Turkheimer and Gottesman (1996; Turkheimer, 1997) illustrates the difficulty of measuring shared environmental effects. They conducted a series of computer simulations that indicated that some of the difficulty of identifying environmental effects in biometric models is methodological. In a dynamic system, the effects of environment were all interactional, with little main effect. When environmental effects were examined within a single genotype, unambiguous environmental variability in phenotypic outcomes was observed; however, the shape of the relation between the environment and phenotype was nonlinear, discontinuous, and not generalizable from one genotype to another. Because the relation between environment and phenotype was inconsistent across different genotypes, when there were numerous genotypes in the simulation and they varied randomly, it was not possible to detect the effects of environment. There clearly were effects of the environment, but they were not systematic. In contrast, the effects of genotype were more systematic and easier to detect.

As noted by Wachs (1993), statistical interactions in empirical work are difficult to obtain due to several factors: (a) the use of inappropriate or imprecise measures of the environment or of individual characteristics; (b) the lack of statistical power in designs for interactions (McClelland & Judd, 1993); (c) the possibility that interactions may involve multiple environmental and organismic variables (and thus would be higher order and even more difficult to ascertain statistically); and (d) the atheoretical nature of most studies of organism-environment interaction. Wachs (1993) suggests that gene-environment interactions, like gene-environment covariance, are a unique influence on development that cannot be assigned to the genetic or environmental side. However, as noted previously, in current statistical procedures for computing hereditary and environmental contributions, variance typically is assigned to *either* hereditary or environmental factors, not both (see Plomin, DeFries, & Loehlin, 1977, for a discussion of the assignment of variance for genotype-environment interactions).

Moreover, behavioral genetics analyses typically do not consider the role of environment in between-group differences or differences in mean levels of an outcome; only the relative rankings of individuals in a group are examined. Thus, if all mothers in a sample of a population were extremely stressed (e.g., due to extreme conditions during a war or extreme deprivation) and used relatively negative child-rearing techniques that resulted eventually in a high mean level of socially inappropriate behavior in the children in this population, this clear environmental effect would not be reflected in standard behavioral genetics analyses. It is a mistake to assume that being reared in different homes means encountering totally different environments; higher-order macrosystem components (e.g., economic adversity, exposure to trauma) may render homes similar in important ways that have critical consequences for development, and these effects that are not reflected in estimates of environment (Bronfenbrenner, 1986; Wachs, 1993).

An example involving physical characteristics may be useful in considering the effects of shared environment. Consider a redheaded girl with a redheaded parent in a culture in which redheads are expected to be impulsive and hotheaded. People in the society may expect the child to be hot-tempered and consequently label the girl as such even when her anger is relatively controlled. The mother may have had the same experience when she was growing up. Moreover, people may not only expect but also tolerate higher levels of uncontrolled emotion from redheaded children (e.g., when the child has a temper tantrum) than from other children because such behavior is consistent with the stereotype for redheads. Thus, others' expectations and behavior, triggered by the physical appearance of the child, may encourage the development of hot-headed behavior in the girl as well as in her parent and in other redheaded siblings. Consequently, mother and child may be more alike in the characteristic of hot-headedness than would this mother with an adopted child without red hair. Moreover, because monozygotic twins generally are concordant in redheadedness, they would be expected to exhibit greater similarity in degree of hot-headedness than would dizygotic twins (who may have different colors of hair). Thus, a physical characteristic could trigger an environmental reaction, which is primarily responsible for the similarity between redheaded monozygotic twins or between biologically related parents and children. Yet the similarity between monozygotic twins would be attributed to genetic factors rather than to the children's shared environment

because redheads are more similar to dizygotic twins. However, if these stereotypes are not shared, redheaded children in a culture with different stereotypes may be more similar to dizygotic twins than to monozygotic twins.

This scenario is similar to the one proposed for the study of monozygotic twins raised apart. In this study, the monozygotic twins were raised in different environments, but they were genetically identical. The study found that monozygotic twins raised apart are more similar to each other than dizygotic twins raised together. This finding is consistent with the idea that the environment has a significant influence on the development of personality. However, the study also found that monozygotic twins raised apart are more similar to each other than dizygotic twins raised together, even when the twins were raised in the same environment. This finding is consistent with the idea that the environment has a significant influence on the development of personality, but it also suggests that there may be some shared environmental factors that are not captured by the study's measures of environment.

The next section discusses the role of the environment in the development of personality. It begins with a discussion of the role of the environment in the development of personality, and then discusses the role of the environment in the development of personality. The next section discusses the role of the environment in the development of personality.

because redheaded monozygotic siblings are likely to be more similar to one another phenotypically than would dizygotic twins in the tendency to be hotheaded. Nonetheless, if these children were in a culture that did not have stereotypes about redheaded children, the monozygotic redheaded twins would be less likely to be hotheaded and less similar to one another in this characteristic than in the culture with the stereotype about redheads.

This scenario is further complicated by the fact that monozygotic twins are likely to spend more time together than dizygotic twins. Thus, they are more likely to be exposed to the same sampling of parenting behavior than are dizygotic twins. In addition, as noted previously, monozygotic twins, due to their similarity in physical appearance and other characteristics, may be more likely than dizygotic twins to elicit similar reactions from other socializers outside the home (e.g., peers, teachers; Baumrind, 1993; L. Hoffman, 1991; Lytton, 1977), which also may contribute to similarities in their social behavior. Although some data are consistent with the view that the assumption of equal environment holds (i.e., that monozygotic and dizygotic twins experience equal environments) for some issues (e.g., certain psychiatric disorders; Hetterma, Neale, & Kendler, 1995; Kendler, Neale, Kessler, Heath, & Eaves, 1993; Scarr & Carter-Saltzman, 1979), many of the measures used to assess similarity of environment or outcome variables are out-of-date and insensitive (Wachs, 1993; also see L. Hoffman, 1991). Thus, one simply cannot assume that the environments of monozygotic and dizygotic twins are equally similar in all ways (L. Hoffman, 1994). However, the statistics in behavior genetics studies rest on this assumption (although it also has been argued that the difference in the environments does not predict variables of importance; Plomin, DeFries, & McClearn, 1980). Moreover, in adoption studies, the assumption is that there is no genetic similarity between adopted children and parents. However, given the likelihood to selective placement of children with parents similar in some characteristics, this may not be entirely true (e.g., there may be genetically based similarities in appearance or intelligence due to matching efforts).

The notion of redheadedness having the aforementioned effect may seem unlikely, but it is clear that physical characteristics such as height and physical attractiveness do elicit specific responses from the environment (e.g., Langlois, 1986). Moreover, at a conceptual level, just because siblings react somewhat differently to the same environmental influence (e.g., maternal low education or depression)

does not mean that the environment is not shared by the siblings.* Related individuals may react differently to the same environment due to exposure to different experiences (e.g., at school or in the neighborhood).

In brief, the complex relations between biological and environmental factors and the importance of environmental factors often are masked by the way the findings in behavioral genetics studies are reported. Moreover, the use of the terms *genetic* versus *environmental* influence in behavioral genetics analyses serves to perpetuate the notion that the two types of influences are independent when they seldom are. Gene-environment covariance and interaction are unique forms of influence on development that should not be assigned exclusively to either genetic or environmental categories (Wachs, 1993). Moreover, as discussed by Horowitz (1993), genetic material is not expressed and does not influence processes in the absence of the environment. Thus, it is probably artificial to speak of a distinction between genetics and environment at all. Horowitz (1993) suggested using terms such as *organismic* and *constitutional* rather than *genetic* because they do not exclude environmental influences. In any case, our thinking about the role of genetics and environment in development, although much more sophisticated than in the past, requires further evolution.

Relatedly, as noted numerous times by authors in this volume, the psychological link between the notion of genetics and stability or invariance in behavior that is common in the field (although disclaimed by most behavioral geneticists) is out-of-date (Caspi, Ch. 6, this Volume). Plomin (1986) stated it well: "We need to pry apart the close association that the adjective *genetics* and *stable* have come to share: Longitudinally stable characteristics are not necessarily hereditary, nor are genetically influenced characters necessarily stable" (p. 4). Recent advances in the study of the role of genetics in change as well as stability of behavior are particularly relevant to developmentalists. One of the challenges for the field is to delineate the ways the environment and genetics jointly affect change in development (see Bronfenbrenner & Ceci, 1994, for an interesting perspective). A recent example is the work of Bradley et al. (1994); they found that low birthweight children raised in poverty generally have a poor prognosis for development, although those reared in environments characterized by several protective factors were relatively likely to show early signs of resiliency. Another challenge for the discipline is to identify

* I thank Eleanor Maccoby for her discussion of this point.

ways the environment alters constitutional (e.g., physiological) factors such as hormones that could influence development and change.

A Focus on Relationships

As noted by Rubin et al. (Ch. 10, this Volume), interest in relationships other than the parent-child relationship has grown tremendously since the 1970s, and perhaps particularly in the years since the last edition of the *Handbook*. In addition, researchers studying the family increasingly have examined not just the parent-child dyad, but also larger chunks of the family unit, associations between quality of parent-parent and parent-child relationships, and links between quality of familial interactions and quality of peer relationships (Parke & Buriel, Ch. 8, this Volume). For example, there is now evidence that marital distress and conflict are related to difficulties in friendships and child behaviors related to peer rejection (Rubin et al., Ch. 10, this Volume). Moreover, investigators have begun to study the role of social relationships outside the family (e.g., as reflected in social support) for quality of interaction within the family (see Parke & Buriel, Ch. 8, this Volume; Rubin et al., Ch. 10, this Volume) and for the provision of social opportunities for children (e.g., adult social networks as a source of potential peer contacts for children; see Parke & Buriel, Ch. 8, this Volume).

Discussion of relationships often includes references to emotion and its development. It is probable that learning about emotion and its regulation, which often occurs in the family, plays a critical role in the quality of later social relationships. Regardless of where children acquire these skills, children who understand and communicate emotion in acceptable ways are likely to have more positive relationships (see Saarni et al., Ch. 5, this Volume) than other children; in addition, the ability to regulate emotion seems to be associated with positive, other-oriented responses such as sympathy and prosocial behavior (Eisenberg & Fabes, Ch. 11, this Volume).

As noted previously, it also has been suggested that the causal link between emotion-related learning and quality of relationships can be reversed: that early attachment relationships play a role in the development of emotion regulation and reflect strategies for regulating emotion in interpersonal contexts (Bridges & Grolnick, 1995; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). The securely attached infant whose parent is consistently and appropriately responsive to the infant's distress signals is believed to learn that it is acceptable to express distress

and to actively seek the assistance of others for comfort when upset. In contrast, avoidant infants, due in part to the parents' nonresponsiveness to their distress signals, may learn to inhibit emotional expressiveness as well as other directed self-regulatory strategies (e.g., contact-seeking and maintaining behaviors; Braungart & Stifter, 1991; Bridges & Grolnick, 1995). Moreover, it has been argued that parental underattunement is associated with infants' inability to attend to their own affective states, label them, and incorporate them into their model of the self (see Crittenden, 1990; Harter, Ch. 9, this Volume). In contrast, parental overattunement or intrusiveness could result in a sense of incoherence about feeling states because of the emphasis on how the infant *should* feel rather than on how he or she actually feels (see Harter, Ch. 9, this Volume; Stern, 1985). Consistent with these perspectives, maternal support has been linked with the variety of coping strategies used by children to deal with stress, as well as with the use of relatively appropriate strategies (e.g., avoidant strategies in uncontrollable situations; Hardy, Power, & Jaedicke, 1993). Moreover, preschool children with secure attachments at 12 and 18 months of age have been found to be more empathic and more prosocial toward others (Kestenbaum, Farber, & Sroufe, 1989).

The internal working model developed in the context of early attachment relationships is believed to affect the quality of children's relationships because of the assumptions and expectations about relationships that are inherent in internal working models (Bretherton & Waters, 1985; Parke & Buriel, Ch. 8, this Volume; Rubin et al., Ch. 10, this Volume; Thompson, Ch. 2, this Volume). One way early attachment relationships affect other relationships is through their influence on the developing sense of self in the infant as lovable or unworthy of love (Bretherton, 1991; Harter, Ch. 9, this Volume). However, Harter (Ch. 9, this Volume) suggests that there is a need to consider how an individual's different attachments might imply different working models of relationships; this issue may have implications for the finding that self-esteem differs in different relationships (e.g., with parents, peers, teachers; Harter, Ch. 9, this Volume).

Obviously, the topic of attachment and early parent-child relationships is a central issue in the study of relationships in developmental psychology. Attachments are hypothesized to affect the development of the self, a range of cognitions relevant to quality of relationships, emotion regulation and emotions attached to various relationships, and even personality development (Eisenberg & Fabes, Ch. 11, this Volume; Harter, Ch. 9, this Volume; Nachmias,

Gunnar, Mangelsdorf, Parritz, & Buss, 1996; Rubin et al., Ch. 10, this Volume; Thompson, Ch. 2, this Volume). Thompson (Ch. 2, this Volume) reviews research pertaining to these issues and raises important questions: (a) Does attachment fully encompass early parent-infant relationships, or are there features of this relationship that are independent of the security of attachment? (b) How do features of the dyadic attachment relationship over time inhere within the child, and how rapidly does this occur? and (c) What should quality of attachment predict about a child's later functioning and why? These questions are related to issues raised by Harter (Ch. 9, this Volume) and merit additional attention in the next decade.

Peer relationships also affect the development of cognitions about the self (including those concerning self-worth and a gender-relevant self-concept) and feelings that are associated with the self and with the social world (Harter, Ch. 9, this Volume; Ruble & Martin, Ch. 14, this Volume). These feelings likely infuse children's conceptions of relationships and their valuing of other people in general. Therefore, it is not surprising that the quality of children's peer relationships has been linked to their social competencies and prosocial tendencies (Eisenberg & Fabes, Ch. 11, this Volume; Rubin et al., Ch. 10, this Volume). However, the ways in which emotions mediate associations between early quality of relationships (familial or extrafamilial) and later social outcomes have received little empirical attention, although, as mentioned previously, such associations have been discussed to some degree by attachment theorists (e.g., in theoretical work on attachment styles as modes of emotion regulation). The roles of emotion as well as cognition as mediators between quality of early relationships and later socioemotional development, and how development, characteristics of the child, and exposure to diverse relationships may moderate the process, are issues that require further study.

An Emphasis on Process (Mediation) and Moderation

As developmental psychologists have produced and accumulated more knowledge about the occurrence and frequency of variables of interest (e.g., descriptive data) as well as about relations among constructs (i.e., correlational data), they have begun to ask more complex questions than in the past. This trend is very evident in this volume of the *Handbook*. For example, in addition to routinely questioning assumptions of directionality of causality, there is evidence in a number of chapters of an increased concern with *process*, as reflected in questions

about mediation. Mediating processes are the processes underlying the relation between two variables (a predictor and a criterion). Mediators help clarify how or why a given relation occurs (Baron & Kenny, 1986).

In addition, based in part on contemporary concern with context, diversity, and individual differences, there is considerable interest in moderating variables, that is, in variables such as sex, socioeconomic class, race/ethnicity, personality, and type of situation that affect the direction or strength of the relation between an independent or predictor variable and a dependent or criterion variable (Baron & Kenny, 1986). Increasingly, psychologists have recognized that one process generally does not fit all, particularly in the study of social behavior and social development. To study moderation, investigators generally examine the interaction of the independent variable with the potential moderator (e.g., age, sex) when predicting an outcome or criterion variable or compare the equivalence of structural models for different groups.

Mediating or moderating processes are discussed directly or indirectly by all chapter authors, but are a central focus in some chapters. For example, Grotevant (Ch. 16, this Volume), in his chapter on adolescence, narrows his content focus by emphasizing studies in which mediation or moderation were examined. In addition, Rothbart and Bates (Ch. 3, this Volume) include a section in their chapter on variables that moderate the relation of temperament to other variables. Bugental and Goodnow (Ch. 7, this Volume) also explicitly emphasize moderation in the socialization process, whereas Eisenberg and Fabes (Ch. 11, this Volume) conclude that studies of moderating effects are an important deficit in the literature on prosocial development.

A few examples of how authors discuss mediation and moderation illustrate the types of issues that are the focus in contemporary work on mediation and moderation. First consider mediation. Eccles et al. (Ch. 15, this Volume) suggest that parental beliefs, practices, and resources mediate between family demographics and achievement-related outcomes. Similarly, both Grotevant (Ch. 16, this Volume) and Coie and Dodge (Ch. 12, this Volume) discuss relations between parenting and offsprings' externalizing behavior. Grotevant reviews work in which adolescents' restraint (a personality variable involving internalization of standards) mediated the relation between parenting and delinquent behavior (Feldman & Weinberger, 1994). Coie and Dodge discuss the possibility that parenting may mediate the relation between the macrolevel variable of poverty and children's aggression. Moreover, Grotevant reviews the importance of identity as a potential mediating variable (e.g.,

between economic hardship and psychological well-being). Consistent with Coie and Dodge, Grotevant emphasizes quality of relationships as mediators between distal environmental factors (e.g., economic resources) and adolescent adjustment, or between family structure or family cohesion and depression. For example, he cites a study by Brody et al. (1994) in which reduced financial resources led to parental depression and disruptions in caregiving, which in turn were associated with reduced self-regulation in adolescents. As noted by Grotevant, studies of this sort go far beyond the simple deficit models of poverty to demonstrate potential intervening processes. Information about such intervening processes is essential for successful intervention and prevention programs.

Bugental and Goodnow's (Ch. 7, this Volume) chapter has a strong focus on cognitive and affective mediators in the socialization process. For example, they discuss the role of automatic cognitive processing as a mediational link between parental beliefs (e.g., about control) and parenting behavior. They also suggest that temporary parental affective state can affect the parent's interpretation and cognitive processing in an ongoing parent-child interaction and, consequently, can influence the appropriateness of a parent's behavior toward a child. Goodnow and Bugental present the relations among cognition, motivation, and emotion in the context of parenting as a continuous flow process with feedback; the result is a complex and very stimulating model with numerous implications for the study of socialization.

Although mediation is emphasized in a number of the *Handbook* chapters, moderation is discussed to an even greater degree. For example, Bugental and Goodnow (Ch. 7, this Volume) consider affect and cognition as moderators of the socialization process; Kagan (this volume) mentions instances in which parental socialization and aspects of the child's temperament interact in the prediction of security of attachment or children's conscience; and Coie and Dodge (Ch. 12, this Volume) note that harsh discipline is a predictor of later aggressive behavior for white but not black children. Eccles et al. suggest that race may moderate relations between competence-related beliefs and school performance (beliefs may predict school performance for white but not black children). In addition, Eisenberg and Fabes (Ch. 11, this Volume) suggest that the interaction of individual differences in emotionality and regulation predicts children's prosocial behavior and sympathy better than the consideration of only the main effects of these predictors. Finally, Ruble and Martin, Turiel, and

others discuss ways in which sex of the child moderates the effects of social experience and various social behaviors (although authors did not always use the term *moderation*).

Grotevant (Ch. 16, this Volume) provides extensive coverage of moderation effects in his review of research on adolescents. For example, he cites Steinberg, Lamborn, Dornbusch, and Darling (1992), who proposed that parenting style (e.g., authoritative versus authoritarian parenting) moderates the influence of specific parenting practices on development in at least two ways: by transforming the nature or quality of the interaction and thus moderating the influence of the specific practices on child outcomes, and by influencing children's personality, especially children's openness to parental influence, which in turn moderates the association between parenting practices and child outcomes. Moreover, Grotevant reviews other studies in which researchers identified protective factors (e.g., adolescents' positive orientation toward school) that moderate the effect of risks on developmental outcomes.

Rothbart and Bates (Ch. 3, this Volume) explicitly evaluate whether the relation between temperament and adjustment is moderated by variables such as environmental factors (e.g., maternal control style, day care quality, parental expectations of the child's temperament), other aspects of temperament (e.g., interactions of regulation with sociability or emotionality), and sex. They believe that there are excellent theoretical reasons for expecting interaction effects in the relation of temperament with adjustment and they review some intriguing studies on the issue. However, they point out that there is not yet an adequate pattern of replicated, longitudinal results to allow them to conclude with confidence that moderation effects help explain the development of adjustment.

Given the relatively recent emphasis on moderation, it is not surprising that there is, as yet, a small and largely unreplicated body of literature on its effects. However, this is likely to change because questions of moderation are moving to the fore in many arenas of interest. The result is likely to be a more differentiated understanding of *when* relations and processes occur—an issue that is an essential complement to the more basic mediational question of *why* relations occur.

A Focus on Combining Data across Studies

A recent trend in psychology is the use of the statistical procedure of meta-analysis to combine data from many studies. With meta-analysis, investigators use quantitative

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procedures to "describe the typical strength of the effect or phenomenon, its variability, its statistical significance, and the nature of the moderator variables from which one can predict the relative strength of the effect or phenomenon" (Rosenthal, 1995, p. 183). As is evident in recent issues of *Psychological Bulletin*, the major journal of reviews in the discipline, meta-analysis has become a popular tool in the field.

Meta-analyses are used by some contributors to this volume; many more cite existing papers in which meta-analyses were conducted. Eisenberg and Fabes (Ch. 11, this Volume) compute meta-analyses to examine age and sex differences in prosocial behavior. Using meta-analytic techniques, they examine the effects of moderators such as type of study (e.g., experimental or correlational) on age and sex differences and examine the relation of each predictor (e.g., type of study) while controlling for the effects of other variables (e.g., type of prosocial behavior). Eisenberg and Fabes find that prosocial behavior increases with age and that the size of this age-related change is greater in experimental/structured designs than in naturalistic/correlational designs. Naturalistic/correlational designs are relatively likely to be used in studies of younger children, whereas experimental/structured designs are likely to be used with older children. After controlling for a variety of study qualities, including type of study, through the use of hierarchical regression analyses, age was still significantly related to prosocial behavior. Thus, with the use of meta-analytic techniques, Eisenberg and Fabes examine alternative hypotheses for explaining the relation of age to prosocial behavior. Procedures such as these are extremely useful for uncovering patterns of findings among many studies using a variety of methods and conducted in diverse settings.

Of course, meta-analytic procedures, like any statistical procedure, can be misused. Care must be taken in selecting studies, applying the procedures, and interpreting the results. Nonetheless, it is likely that meta-analytic procedures will be used increasingly in the future, in part because of their utility for examining moderating variables (due to the statistical power achieved by combining numerous studies).

A Focus on Application

Another trend in the developmental research has been an increased interest in application and real-world problems. This emphasis in the discipline is reflected in the fact that for the first time, one volume of the *Handbook* (Volume 4)

is devoted to applied issues; thus, much of the applied work is discussed in that volume. Nonetheless, the contemporary concern with application also is reflected to some degree in this volume.

This concern can be seen in both the topics of study and the ways in which people are conducting research on certain topics. In regard to topics of study, work on aggression, regulation, coping, and social competence is burgeoning, no doubt in part because of concern in society about children's psychological health, violence, and related social issues (Coie & Dodge; Eisenberg & Fabes; Rubin et al.; Saarni et al., all this Volume). Moreover, investigators increasingly are turning their attention to the issue of development in stressful contexts such as families in poverty, one-parent families, and families of divorce (Parke & Buriel, Ch. 8, this Volume). Concern with these topics often has been spurred by heightened interest in and funding for research focused on prevention of violence, substance abuse, and psychological problems. Concern with clinical issues and prevention is not without precedent, of course; much of the early work in child development grew out of a desire to understand the origins of typical childhood problems (e.g., the longitudinal research at Berkeley).

In regard to methods of conducting research, work on topics that have been a focus of interest for a long time is increasingly being conducted outside the laboratory in real-world contexts so that findings have direct applicability to prevention, clinical, and policy issues. For example, developmentalists are becoming involved in the process of obtaining knowledge that can be used to design real-life programs that lessen the probability of negative effects from exposure to stressors (e.g., divorce, poverty) or that promote prosocial behavior or inhibit aggressive tendencies in school settings (Coie & Dodge, Ch. 12, this Volume; Eisenberg & Fabes, Ch. 11, this Volume). Moreover, developmentalists are deeply involved in evaluating programs such as day care that have implications for both families and policy (see Volume 4). It is likely that the trend for developmentalists to apply their theory and methods to real-life issues in real-world contexts will continue into the next decade and century.

SUMMARY

In general, the chapters in this volume reflect intellectual excitement and expanding possibilities due to emerging themes, constructs, and methods, and a recent permeability

in the intellectual boundaries of the field. Many of the changes in the study of social and emotional development in the past decade or two can be characterized by two familiar concepts: increasing integration and differentiation. In this context, I am using the term *integration* to mean the incorporation into the study of social functioning of ideas and methods from diverse approaches and topics in developmental psychology, other subdisciplines of psychology, and even other disciplines such as sociology, genetics, and anthropology. As an example, the study of behavioral and social inhibition and deficits in social competence has been enriched by work in psychophysiology (e.g., on heart rate variability), clinical psychology and psychiatry (e.g., research on behavioral disorders and temperament), personality (e.g., research on individual differences in shyness, regulation, and coping), and social psychology (e.g., notions about the role of attributional processes in problem behaviors). Moreover, the emphasis on emotion in other areas of psychology has permeated developmental psychology. The integration of new and different methods, constructs, and theoretical perspectives has broadened not only our understanding of social and emotional development, but the entire framework upon which we design and interpret research findings.

Differentiation within the field of social development may be viewed in terms of contexts, constructs, and causal inferences. As noted previously, the burgeoning interest in context in developmental psychology is reflected in the study of many levels of influence, including diversity in culture and subculture, race and ethnicity, sex and gender, and types of families and groups. In regard to constructs, our thinking is becoming less global and more conditional, multifaceted, and complex. Similarly, proposed causal influences of various social processes are becoming more multifaceted and less simple. Researchers are increasingly acknowledging and examining the multiplicative and co-varying contributions of various types of environmental and biologically based influences on social functioning. For example, children are increasingly being viewed as producers of their environment as well as the products of socialization (e.g., Lytton, 1990), and development often is viewed as a consequence of social interactions that are shaped by contextual factors and characteristics of all participants in the interaction. Although interactional and reciprocal causal models are not new, they are becoming a part of our everyday thinking about psychological phenomena. Of course, as noted in the discussion of the analytic tools used by behavioral geneticists, implementation of complex interactive models into

research designs lags behind conceptual models. However, analytic methods for exploring reciprocal, additive, and interactive causal influences, as well as analyses for examining nonlinear relations and growth curves, are becoming more common, so developmentalists are increasingly able to test complex conceptions of development empirically. The next decade will undoubtedly be an exciting time for the study of social, emotional, and personality development.

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