

# Cognition, competence, and coping in child and adolescent depression: Research findings, developmental concerns, therapeutic implications

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## Abstract

Findings of the few psychotherapy outcome studies with depressed children and adolescents raise questions about whether or not treatments are sufficiently sensitive to developmental factors. Here we review the outcome data, then survey potentially relevant research on the cognitions, competencies, and coping behavior of depressed youngsters. Much of the work in each domain is both procedurally and theoretically adevelopmental, and the psychotherapy research does not appear to be well informed by research in the other domains. To help remedy this situation, for each domain we suggest key developmental questions that need to be answered, and we discuss implications for psychotherapy. We also propose a three-way partnership involving basic developmental research linked with research on relations between depression and various cognitive and behavioral processes, with both lines of inquiry informing the development and refinement of interventions.

With the recent surge of interest in child and adolescent depression has come a remarkable volume of research on characteristics of depressed youngsters. In this article, we try to provide a fair account of this research and its theoretical context, and we try to encourage a developmental perspective on depression and its treatment. A tension exists between these two goals. Few of the studies we review here have included *any* developmental dimension, and in the few studies that have done so, development has generally been operationally defined as chronological age. As Rutter (1989) has noted,

“age is the developmentalist’s fundamental independent variable,” but until “it is broken down into its component parts, age is devoid of meaning” (p. 1). The components for which age is a marker certainly include the broad cognitive, social-emotional, and biological dimensions as well as more specific dimensions such as behavioral competencies and coping styles, with each dimension following a particular ontogenetic sequence and each related in its own way to the emergence and expression of problem behavior. Ultimately, researchers interested in childhood depression will need to understand how depression relates to such dimensions and their interplay over the course of development. As this article will reveal, we have a long way to go before this kind of understanding can be claimed.

We begin the article with a review and critique of the thin data base on psychother-

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Preparation of this article was facilitated by grants R01 MH49522 and R01 MH38240 from the National Institute of Mental Health to John Weisz.

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apy outcomes with depressed youngsters. Then we survey the research literature on cognition, competencies, and coping patterns among depressed youngsters, a body of work that is highly relevant to treatment but has had little impact on psychotherapy research. Throughout the review, we highlight developmental and therapeutic implications of the research, and we pose questions for future study.

### **Psychotherapy Outcomes With Depressed Youngsters: What We Know Thus Far**

Psychological interventions *may* help ameliorate depression in children and adolescents, but given the small number of outcome studies thus far, we cannot be sure. In this section we describe, via metaanalytic techniques, the state of knowledge about effects of psychotherapy on child and adolescent depression. This description forms a backdrop for our review of findings on cognition, competencies, and coping and the implications of those findings for the study of development and intervention.

For this review, we selected therapy outcome studies that focused on depression as a target problem, used subjects younger than age 18, and assigned subjects selected from the same population as the treated subjects to a no- or minimal-treatment control group. Psychotherapy was broadly defined to include any planned intervention designed to ameliorate the cognitive, behavioral, or emotional problems associated with depressive disorders. A comprehensive literature search using computerized editions of *Psychological Abstracts* and *Index Medicus* and previous reviews and meta-analyses of psychotherapy with children and adolescents (e.g., Casey & Berman, 1985; Weisz, Weiss, Alicke, & Klotz, 1987). Bibliographies of candidate studies revealed only six controlled treatment-outcome studies that met our inclusion criteria; these are identified in Table 1.

*Characteristics of the samples.* Characteristics of the six studies (e.g., therapy techniques, content and source of outcome mea-

asures) were coded using systems reported in previous metaanalyses by Weisz et al. (1987) and Weiss and Weisz (1990). Overall, the studies included 169 treated and 78 untreated youngsters, aged 7–18 years, with 51% males. In two of the six studies, screening was conducted in schools and involved multistage, multimeasure procedures (see Reynolds, 1986). Candidates were identified by self-reports on a depression scale (e.g., Children's Depression Inventory [CDI]), followed by reassessment with the same scale, and a standardized clinical interview. Two studies did not follow this screening sequence. Butler, Mieziitis, Friedman, and Cole (1980) selected an elementary school sample using a single wave of self-report questionnaires with only one direct measure of depression. Lewinsohn, Clarke, Hops, and Andrews (1990) applied the most comprehensive screening procedure to date, with two self-report depression measures, a parent report behavior checklist, and a diagnostic interview with child and parent; subjects, recruited through school and health professionals and the media, all met either *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association, 1980) criteria or research diagnostic criteria for nonpsychotic depressive disorders.

*Treatments.* Across the six studies, there were 12 different treatment groups compared to 6 control groups. In all but one study, subjects were randomly assigned to treatment conditions. Treatments, conducted in groups, averaged 11 sessions (range = 8–14), each about 1 hr (range = 45–120 min). Sessions were generally led by graduate student therapists in school settings. Treatment methods, adapted from those showing positive effects with adults, included cognitive-behavioral training modules, training in interpersonal and behavioral problem-solving skills, progressive muscle relaxation, and self-control training. There was substantial overlap in the activities of the 12 treatment groups—for example, most included some cognitive-behavioral training. This fact, plus the

**Table 1.** Summary of treatment-outcome studies with depressed youngsters:  
Mean effect size (and SE) pooled across outcome measures for each treatment group

Study	Treatment Approach	N	Posttreatment	Follow-up
Children ( <i>M</i> age = 7–12)				
Butler et al. (1980)	Role-play	14	0.63 (0.44)	None
	Cognitive restructuring	14	0.57 (0.40)	None
Stark, Reynolds, & Kaslow (1987)	Self-control	9	0.53 (0.40)	–0.03 (0.68)
	Behavioral problem solving	10	0.41 (0.31)	–0.55 (1.10)
Liddle & Spence (1990)	Social competence training	11	0.17 (0.25)	0.24 (0.21)
Adolescents ( <i>M</i> age = 12–18)				
Reynolds & Coats (1986)	Relaxation	9	1.40 (0.53)	1.34 (0.23)
	Cognitive-behavioral	11	1.12 (0.71)	1.10 (0.75)
Kahn, Kehle, Jenson, & Clark (1990)	Cognitive-behavioral	17	1.11 (0.78)	0.94 (0.26)
	Relaxation	17	0.93 (0.31)	0.68 (0.12)
	Self-modeling	17	0.87 (0.34)	0.45 (0.22)
Lewinsohn et al. (1990)	Coping with depression course (adolescent-only)	21	0.43 (0.49)	None
	Coping with depression course (adolescent and parent)	19	0.77 (0.58)	None
Pooled average effect size	(all therapies)		0.74	0.52
SE	(all therapies)		(0.35)	(0.63)

small number of studies available, precludes analysis of the effects of different treatment approaches.

**Outcome measurements.** Of all the outcome measures used, 77% assessed outcomes via child self-report questionnaires, 16% were parent reports, 9% were observer or interviewer assessments, and only 1% were teacher evaluations. Approximately 52% of all outcome measures used were intended to measure depression directly. The remaining measures assessed related constructs such as locus of control or self-concept (17%), anxiety (8%), social skills deficits (9%), somatic complaints (3%), social withdrawal (3%), and vague overcon-

trolled or undercontrolled problems (6%). Of the 12 treatment groups, 8 were assessed at follow-up as well as immediately posttreatment. Follow-ups averaged 7.25 weeks posttreatment (range = 4–12).

**Evaluation of treatment efficacy.** We estimated standardized treatment-control group differences at pre- and posttreatment and follow-up assessments, for each outcome measure, following Smith, Glass, and Miller (1980). For each measure, at posttreatment and follow-up, we calculated an effect size (ES; i.e., the difference between the treatment group mean and the corresponding control group mean, divided by the control group standard deviation). A

positive ES indicates that the treated group had a better outcome than the control group. To ensure that studies with many outcome measures would not have undue weight in the metaanalysis (Weiss & Weisz, 1990), we pooled effect sizes across outcome measures within each treatment group.

Pretherapy treatment-control difference scores were computed to check whether or not, on average, the treatment and control groups were equivalent, prior to therapy, on measures later used to assess treatment outcome. The average treatment-control group difference score at pretreatment was near zero ( $M = -0.04$ ,  $SE = 0.32$ ), indicating near-equivalence. After therapy, the mean ES was 0.74 ( $SE = 0.35$ ) at posttreatment and 0.52 ( $SE = 0.63$ ) at follow-up. A one-way ANOVA using assessment period as a three-level (pre, post, follow-up) repeated measure and the treatment-control group difference score as the dependent variable was significant,  $F(2, 14) = 15.32$ ,  $p < 0.001$ . Planned contrasts confirmed that posttreatment increases in ES represented significant improvements when compared to pretreatment,  $t(11) = 4.24$ ,  $p < 0.004$ , as were treatment-related improvements at follow-up compared to pretreatment,  $t(7) = 2.99$ ,  $p < 0.02$ . However, a post hoc contrast indicated that follow-up ES was, on average, smaller than immediate posttreatment ES,  $t(7) = 2.46$ ,  $p < 0.044$ . The average youngster receiving psychotherapy for depression was better off at posttreatment than 77% of the control group and better off at follow-up than 69% of the control group. Table 1 shows the ES data for each treatment-control comparison.

**Developmental concerns.** The impact of developmental factors on treatment outcome may take many forms. In later sections we will consider the role of individual developmental characteristics, such as cognitive level and coping styles, as factors that may influence therapeutic success. Given the absence of a clear developmental foundation

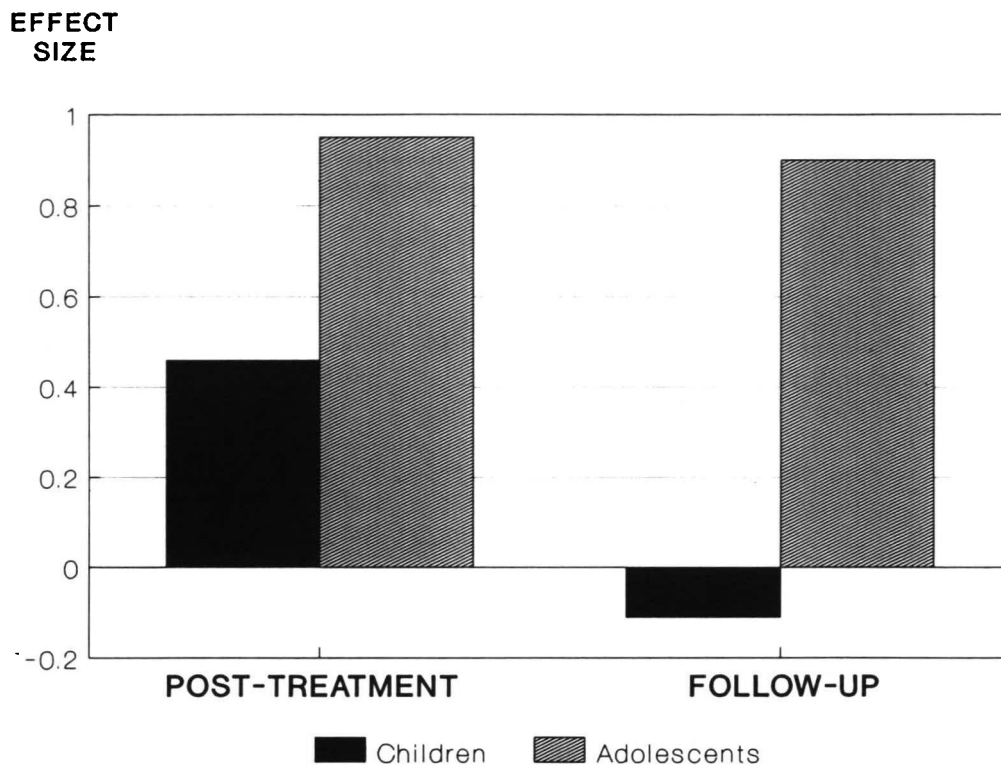
for this research, however, we begin here at the most basic level with a discussion of age differences in therapy outcome.

None of the outcome studies reviewed here examined age-group differences in treatment outcome. However, because the treatment approaches used were largely downloaded from the adult literature, it is possible that they are better suited to adolescents than children. To explore this possibility we compared studies conducted with children (ages 7–12; three studies with five treatment groups) to studies with adolescents (ages 12–18; three studies with seven treatment groups). Results are shown in Figure 1.

The average posttreatment ES for children, 0.46 ( $SE = 0.18$ ), was significantly smaller than that for adolescents, 0.95 ( $SE = 0.31$ ),  $t(10) = 3.13$ ,  $p < 0.011$ . This difference was magnified at follow-up, where the average ES for children,  $-0.11$  ( $SE = 0.40$ ), was again significantly smaller than that for adolescents, 0.90 ( $SE = 0.35$ ),  $t(6) = 3.79$ ,  $p < 0.009$ . The average child was better off at posttreatment than 67% of control group children; for adolescents the figure was 83%. At follow-up, treated children were better off than only 46% of their untreated peers (i.e., treatment had no lasting effect), whereas adolescents had more favorable outcomes than 82% of their untreated peers.

**Therapeutic implications.** Overall, the ES data reveal positive therapy effects, effects that were maintained for at least a short period after the end of therapy. Results also suggest that the treatments used thus far may be more effective with adolescents than with children, but the small number of studies makes this only a tentative suggestion. Nonetheless, this finding underscores the need for the next generation of outcome studies to address the impact of age—and other developmental factors—on therapeutic success.

Given that the ES data are based primarily on school-based samples, one might question whether or not the findings will general-



**Figure 1.** Psychotherapy outcomes (mean effect sizes) for children and adolescents at posttreatment and at follow-up, pooling across studies and across all outcome measures.

ize to clinical populations. The scope of treatment outcome studies needs to be extended to include more clinic-referred children and adolescents (see Weisz & Weiss, 1989a).

Much of our information about treatment outcome is based on youngsters' self-reports. Although such reports may have adequate test-retest reliability (Reynolds & Graves, 1989), self-reports of internalizing problems generally show very modest correlations with peer and adult evaluations (Achenbach, McConaughy, & Howell, 1987). Certainly, the child's subjective distress should be a central target for intervention. However, peers, parents, and teachers have important perspectives on the child's behavior and adjustment, and an important index of treatment outcome is the extent to which effects are evident to significant others in the child's world.

There is significant comorbidity among

depression, anxiety, and conduct disorders (e.g., Puig-Antich, 1982), and co-morbidity is likely to predict long-term adjustment. Thus, multitrait assessment will be needed to evaluate the specificity of treatment effects and to highlight secondary problems that may need to be targeted for intervention. Two additional issues warrant brief mention. First, the short period of follow-ups in the studies reviewed here ( $M = 7$  weeks posttreatment) leaves questions about significant long-term maintenance of treatment gains unanswered. Second, the eclectic nature of treatments tested thus far makes it difficult to determine which specific components of therapy are most effective.

The interventions most often used in these outcome studies target child and adolescent cognitions and competencies, including problem-solving and coping skills, but not all the interventions appear to be guided by research findings on the cogni-

tions, competencies, or coping behavior of depressed youngsters. In the remainder of this article, we review findings in these areas and address related developmental and therapeutic issues.

### **Cognitions and Cognitive Processes**

There is ample literature in the cognitive domain, in part because the popularity of various cognitive models of depression in adults (Abramson, Seligman, & Teasdale, 1978; Beck, 1976; Rehm, 1977) has led researchers and clinicians to extend such models to child and adolescent depression.

#### *Global self-cognitions*

Many developmental psychopathologists have speculated about the role that global cognitions may play in the onset and maintenance of depressive disorders in children and adolescents. This area of research has been extensively reviewed elsewhere (Hammen, 1990) and will be merely summarized here. Where possible, we will distinguish (following MacLeod & Mathews, 1990) between cognitive *products*—that is, conscious, accessible attitudes, perceptions, and beliefs—and cognitive *processes*—that is, underlying appraisal mechanisms.

Studies focusing on cognitive products have shown a relatively consistent relationship between depression and negative beliefs about self. For example, a significant correlation has been found between depression and poor self-esteem or self-concept in both normal youngsters (e.g., Kaslow, Rehm, & Siegel, 1984) and depressed inpatient children (Kazdin, Rodgers, & Colbus, 1986) and adolescents (Koenig, 1988). However, such critical self-perceptions may be specific to the depressed state and may disappear during remission (Asarnow & Bates, 1988; McCauley, Mitchell, Burke, & Moss, 1988). Depression has also been linked to hopelessness in child psychiatric inpatients (Asarnow, Carlson, & Guthrie, 1987; Kazdin et al., 1986) and child and adolescent

outpatients and inpatients (McCauley et al., 1988).

Researchers have also studied control-related beliefs. Some studies have found a relationship between depressive symptoms and external locus of control in normal children (e.g., Mullins, Siegel, & Hodges, 1985), but one study of a psychiatric sample of 7–17-year-olds yielded nonsignificant findings (McCauley et al., 1988). In an extension of the locus of control model, Weisz and colleagues (e.g., Weisz, 1986a; Weisz & Stipek, 1982) have proposed a two-dimensional formulation that construes control as a joint function of outcome contingency and personal competence. Initial studies based on this model suggested that depressive symptoms correlated with perceived competence, but not with perceived contingency, in a nonclinic sample of fourth to sixth graders (Rintoul & Weisz, 1989), three outpatient clinic samples of 8–17-year-olds (Weisz, Weiss, Wasserman, & Rintoul, 1987), and three inpatient clinic samples of 8–17-year-olds (Weisz et al., 1989). However, more recent evidence shows a significant linkage between both contingency and competence beliefs and self-reported depression among normal fourth and fifth graders (Weisz, Proffitt, Sweeney, & Carr, in press). Finally, depressive symptoms in 8–12-year-old school children have been found to be related to irrational belief systems, including perfectionism, excessive need for approval, and unreasonably high self-expectations (Robins & Hinkley, 1989).

Research on cognitive *processes* has been stimulated by theories that address the information-processing style or self-evaluation process in depressed youngsters. These theories generally posit a traitlike tendency to process information in ways that precipitate the types of cognitions described earlier. For instance, in the so-called “depressive attributional style,” negative events are attributed to internal, global, and stable causes. Some studies have shown a concurrent and predictive relationship between this style and depressive symptoms in normal and psychiatric groups (e.g., Curry &

Craighead, 1990; Kaslow, Rehm, Pollack, & Siegel, 1988). However, other studies have not fully supported this association (Hammen, Adrian, & Hiroto, 1988; Robins & Hinkley, 1989), have qualified it as mood-dependent (Asarnow & Bates, 1988), or have suggested that it is not specific to depression, but is also linked to anxiety (Bell-Dolan & Last, 1990) and externalizing problems (Bell-Dolan & Last, 1990; Benfield, Palmer, Pfefferbaum, & Stowe, 1988).

A second process-oriented approach focuses on self-regulatory style, including self-monitoring, self-evaluation, and self-reinforcement. For example, Kendall, Stark, and Adam (1990) explored patterns of standard setting and evaluation in depressed and nondepressed third to sixth graders. Results supported the presence of negative self-evaluation, but not extreme standard setting, in the depressed group. Similarly, Meyer, Dyck, and Petrinack (1989) found low pretask expectations and low posttask evaluations to be associated with moderate depression in fifth and sixth graders, and Kaslow et al. (1984) found that mildly depressed first, fourth, and eighth graders, compared to their nondepressed peers, expected poorer performance for themselves, set more stringent criteria for failure, evaluated their performance more negatively, and advocated punishment more than reward.

A third group of theorists has espoused a schema-based model that holds that depressed children impose structure and meaning onto incoming information so as to confirm self-deprecating beliefs (see Hammen, 1990). Empirical support is limited thus far, but some researchers have found that dysphoric and depressed children do process information in such a negative manner. For example, Roback Moyal (1977) found that depressive symptoms in fifth and sixth graders correlated positively with the endorsement of helpless, self-blaming, and other-blaming responses. Additional support has been gathered in both normal (Leitenberg, Yost, & Carroll-Wilson, 1986) and clinical (Haley, Fine, Marriage, Moretti,

& Freeman, 1985) groups. Some authors have found that this tendency to interpret ambiguous information self-critically appears to be specific to children with affective disorders (Haley et al., 1985), but others have questioned this specificity (Leitenberg et al., 1986). Finally, evidence on the last stage of cognitive processing—that is, memory—indicates that depressed children demonstrate enhanced recall of negative self-referent adjectives (Zupan, Hammen, & Jaenicke, 1987).

### *Domain-specific cognitions*

Early cognitive theories of child depression implicated generalized biases, but some contemporary models have eschewed global constructs in favor of situation- and domain-specific distortions (Hammen, 1990; Kaslow et al., 1984). For example, researchers have reported a linkage between self-reported depression and negative self-perceptions of social competence and peer acceptance (e.g., Kennedy, Spence, & Hensley, 1989; Leitenberg et al., 1986; Robins & Hinkley, 1989; Wierzbicki & McCabe, 1988), of academic or cognitive performance (e.g., Asarnow et al., 1987; McGee, Anderson, Williams, & Silva, 1986), and of behavioral competence (e.g., staying out of trouble; Proffitt & Weisz, 1992; Weisz et al., in press).

### *Interpersonal cognitions*

Research on self-referent cognitions needs to be complemented by research on cognitive mediation beyond the level of the self—that is, in such forms as “interpersonal schemas” (Safran, 1990) and “internal working models” (Cummings & Cicchetti, 1990). These are generally conceptualized as cognitive representations of attachment figures, attachment relationships, and the self within these relationships. In a similar vein, some researchers recommend a focus on cognitions about interpersonal or “ecological” contexts (e.g., family and peer group) (see Kaslow et al., 1984).

Although there are relatively few studies

thus far, early evidence has linked depression to negative representations of the family. For instance, in a sample of normal first, fourth, and eighth graders, Kaslow et al. (1984) found a significant relation between self-reported depression and negative perceptions of family (e.g., reports of parents' psychological unavailability and of poor parent-child relationships). Similarly, representations of insecure parental attachment relationships (e.g., poor communication, alienation, lack of trust) have been linked to clinical depression in early adolescence (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990) and to depressive symptoms in a nonclinical adolescent sample (Armsden & Greenberg, 1987). Finally, studies of the childhood memories of adolescents and young adults support an association between depressive symptoms and perceptions of low levels of parental care, involvement, nurturance, support, and affection and heightened overprotection, guilt induction, overintrusiveness, and authoritarianism (Blatt, Wein, Chevron, & Quinlan, 1979; Lamont, Fischhoff, & Gottlieb, 1976; Parker, 1981). Such representations may also discriminate between depression and other psychopathology (Armsden et al., 1990; Lamont et al., 1976).

There are similar findings on representations of peers. For example, quality of perceived peer attachment has been found to be negatively correlated with self-rated depression in normal (Armsden & Greenberg, 1987) and psychiatric (Armsden et al., 1990) samples of adolescents; however, one study found that children with major depressive disorders perceive peers more *positively* than do nondepressed children (Reid, 1991).

### *Developmental concerns*

Taken together, the studies highlight the relevance of negative cognitions as either etiological or concurrent features of depression in children and adolescents. Nevertheless, most of the theoretical models represent rather direct attempts to extend adult theories uniformly to children. In fact, some have implicitly assumed uniformity

between the role of cognitions in adult and child populations and among youth of different ages. Studies have often reflected this trend by focusing on narrow age ranges but offering age-general interpretations of findings, or by grouping together younger and older children. Others have controlled for age statistically rather than directly exploring age main effects or interactions of age with other factors. To be sure, a few investigators have examined age-related differences in depressive cognitions. For example, findings suggest that younger children are more susceptible than their older peers to certain cognitive errors (e.g., catastrophization, personalization; Leitenberg et al., 1986) and to certain aspects of depressive attributional style (e.g., attribution of negative events to stable causes (Robins & Hinkley, 1989)). Others have found the reverse age trend for such depressive cognitions as stringent standard setting, high expectations for performance, and negative self-concept (Kaslow et al., 1984; Kendall et al., 1990; McCauley et al., 1988); and some cognitions, such as feelings of hopelessness, have not been found to differ with age (McCauley et al., 1988). Such results shed some light on the development of cognitive processes, but they yield no information on age differences in the *relationship* between such cognitions and depression.

In constructing models of age-related change in that relationship, theorists might do well to ask how self-related cognitions may influence the depressive experience. For instance, the egocentric quality of young children's perceptions may lead them to overestimate their causal influence (Piaget, 1930; Weisz, 1983, 1986b), and perceived causal responsibility for negative events may increase vulnerability to depression (Zahn-Waxler, Kochanska, Krupnick, & McKnew, 1990). Also, self-schemas that form at the preoperational level may involve dichotomous or absolutist thinking (Hammen, 1990), which may decrease the flexibility of the cognitive system to incorporate future positive feedback; in this way, early onset of self-deprecating cognitions could set the stage for persistent depression.



Alternatively, the young child's tendency to develop more superficial and less global or stable self-concepts (Harter, 1988; Zamansky Schorin & Hart, 1988) may actually *diminish* susceptibility to depression, particularly prolonged depression. The self-concepts of older children are centered around more psychologically oriented attributes and may be more vulnerable to social comparison processes, which may result in self-critical thinking (Harter, 1988). Furthermore, the propensity of older children to generalize, project into the future, and experience guilt (Zahn-Waxler et al., 1990) may increase the likelihood of depression in response to negative self-evaluation (Rothbaum & Weisz, 1989).

Research has revealed age differences in the focus, meaning, and impact of self-descriptive schemes across time (Zamansky Schorin & Hart, 1988). Various aspects of children's self-concept, such as physical appearance, athletic ability, peer acceptance, and academic ability, may be differentially valued at different ages. For instance, during middle childhood perceptions of the self become increasingly focused on interpersonal themes (Harter, 1988). Other evidence suggests that children's attributions of significance to particular competence domains (i.e., interpersonal vs. academic) may influence the onset of depression in the face of negative life stressors (Hammen & Goodman-Brown, 1990). Thus, in a number of ways, integrating data on normal development with clinical data may prove valuable in refining current cognitive models of child depression.

As for interpersonal representations, researchers have begun to emphasize such possibilities as developmental change in the structure, content, and operation of internal working models (Cicchetti, Cummings, Greenberg, & Marvin, 1990). The implications for depression vulnerability in children are extensive. For instance, the relative significance of maladaptive cognitions about self and others, *and* their association with depression, may shift as the child matures. Certainly the functions (e.g., control, nurturance, intimacy) and significance of vari-

ous interpersonal relationships change with age (Hunter & Youniss, 1982); accordingly, cognitive representations of parental, peer, and romantic relationships may shift in importance and in their implications for depression. A key long-term goal will be the construction and substantiation of theoretical models that encompass change in children's cognitive representations and change in the ways those representations relate to depression across the life span.

Although the preceding discussion emphasizes *age-related* differences as they may relate to the experience of depression, we reiterate that age is best construed as a gross summary variable. The fact that a child uses cognitive processing styles characteristic of a particular age group may constitute more useful developmental data than the child's age alone. Researchers will need to find ways of directly assessing the particular developmental dimensions of interest (e.g., the nature of cognitive representations of self and others) rather than relying on assumptions about where children fall on those dimensions, based on children's chronological age alone.

### *Therapeutic implications*

The ontogenetic perspective we recommend may also inform the development of interventions. For example, to the extent that distorted information-processing mechanisms play an *etiological* role in depression, the identification and modification of maladaptive cognitions may prove to be an effective method of prevention and treatment (Kendall et al., 1990). The developmental stage at which such cognitions form may influence the amenability of these processes to therapeutic change. Because schemas, by their very nature, selectively filter incoming information, early cognitions involving overly simplistic, all-or-nothing thinking may preclude the accommodation of schemas to disconfirmatory evidence during treatment. Thus, early intervention may help children avoid the acquisition of ingrained and intransigent cognitions (Hammen, 1990). Even if negative cognitions are mood-

dependent, they may still act to maintain and exacerbate a current episode (Hammen, 1990) and, therefore, hamper therapeutic progress.

Therapeutic interventions may be further informed by knowledge about age-related changes in the importance of particular domains of self-cognition, as already outlined. For example, because acceptance and support by peers becomes increasingly important in late childhood and early adolescence, negative beliefs about one's social competence may be strongly linked to depression at this stage, and interventions targeting such cognitions may be particularly beneficial. More broadly, Harter (1988) has suggested that successful treatment depends not only on knowledge of a child's perceived competencies across domains, but also on the affective salience the child assigns to the various domains. Similarly, we will need to understand age-related changes in the relative importance of interpersonal schemas about parental, peer, and romantic relationships if we are to design developmentally appropriate treatment programs.

To be developmentally sensitive, interventions must also fit the capability of youngsters to take advantage of various cognitive techniques. Such techniques as cognitive restructuring and self-regulatory strategies—originally created for adults—demand the recognition, verbalization, and modification of internal processes. Younger populations, or those with less introspective ability, may have diminished access to these mechanisms and may be less able to exert purposeful changes in response to direct intervention. Therapies that rely on cognitive or verbal mediation must, therefore, be adapted to the child's cognitive-developmental level (Weisz & Weiss, 1989b).

Although much of our discussion of therapy is theoretical, there is at least one applicable body of research—that is, studies of cognitions as moderators or mediators of therapy outcome. Reviewing this research, Weisz and Weiss (1989b) found some evidence that cognitive capacity—in the form of IQ and Piagetian cognitive level—is related to improvement during

cognition-mediated treatment. In addition, modest relationships have been found between treatment outcome and pre- and postintervention cognitive process and content variables, such as attributional style (e.g., Kendall & Braswell, 1984), locus of control (McMurray, Bell, Fusillo, Morgan, & Wright, 1987), and perceived contingency (Weisz, 1986b). These studies do not clearly show that improvement was mediated by the therapeutic process in combination with preexisting cognitions. However, there is evidence that cognitive interventions can modify young people's cognitions and that such modifications can lead to changes in behavior (see Weisz & Weiss, 1989b). Most of this evidence involves self-instructional training with children who have externalizing problems; thus, extension of this work to depressive disorders should be on the agenda for future research. Such research should explore changes in cognitions during treatment, as well as the influence of these changes on affect and behavior. Finally, outcome research should explore whether therapeutic success is enhanced when specific techniques are matched to children's personal cognitive styles.

### **Levels of Competence (Social, Academic, Behavioral)**

As the preceding section indicates, a number of the cognitions associated with child depression involve children's self-perceptions of their own behavior and competencies. It is important that this literature be understood in the light of more objective indicators of depressed children's *actual* behavior and levels of competence. To the extent that depression in young people is primarily a matter of cognitive distortion (e.g., depressogenic biases, unreasonably negative self-evaluation) in youngsters whose actual behavior and competencies resemble those of nondepressed youth, psychotherapy may need to focus on cognitive processes and how to modify them. However, if child depression entails actual deficits in competence, therapists may need to include skills training in their treatment

regimen. We turn now to research on the competence of depressed youth, in three domains: social, academic, and behavioral (i.e., conduct).

### *Social competence—Research with nonclinical samples*

Some theorists (e.g., Lewinsohn, 1974) suggest that social skills deficits foster depression, in part by undermining access to social contact and social reinforcement. Research with children involves a rather wide range of operational definitions of social competence, including sociometric nominations and ratings by peers or others, performance on paper-pencil inventories of social behavior or social skills, and direct behavioral observations. We first consider studies involving nonclinical samples and then turn to studies of clinically diagnosed groups.

Jacobsen, Lahey, and Strauss (1983) collected children's ratings on "peer liking" scales and teacher ratings of peer popularity for children in grades 2–7 of a parochial school. Depression, assessed via teacher ratings, peer nominations, and self-reports, was generally significantly correlated with the popularity measures. Although the direction of scaling of some measures was unspecified, the authors' discussion of the findings suggests that all significant correlations involved higher levels of depression associated with lower levels of popularity. Similarly, Fauber, Forehand, Long, Burke, and Faust (1987), studying 11–15-year-olds, found significant negative correlations between CDI scores and self-, mother-, father-, and teacher-rated social competence, as well as observer ratings of the adolescents' positive communication with mothers. Proffitt and Weisz (1992) also found CDI scores to be negatively correlated with teacher ratings of social competence for fourth and fifth graders.

Other findings have been more mixed. Wierzbicki and McCabe (1988) found that parent evaluations of children's social skills were negatively correlated with 8–14-year-olds' CDI scores 1 month later but were neg-

atively correlated with concurrent CDI scores in only one of two studies. Sampling 11–14-year-olds, Forehand, Brody, Long, and Fauber (1988) obtained CDI self-reports, teacher ratings of social competence, and observer ratings of social problem-solving and communication skills. Observer-rated problem-solving and communication skills were both negatively correlated with CDI scores, but teacher ratings were not.

Finally, we note two relevant studies using unusual but revealing methods. Strauss, Forehand, Smith, and Frame (1986) had teachers identify two groups of second to fifth graders: "low frequency interactors" and an "outgoing or sociable" group. When the two groups were compared on a battery of measures, the withdrawn children were found to be both more depressed and more anxious than the outgoing children. Peterson, Mullins, and Ridley-Johnson (1985) had third to sixth graders view films depicting a peer who was either depressed or nondepressed and who either had numerous recent life stresses or no recent stress. Children rated the depressed peer lower than the nondepressed peer on likability, attractiveness, and likelihood of current and future positive behavior. However, high life stress mitigated the negative ratings, especially for younger children. The findings suggest that a child's depressive behavior may provoke negative assessments by peers, but that these assessments may be moderated somewhat by information indicating that the depressed child has experienced adversity.

### *Social competence—Research with clinical samples*

We turn now to studies with clinical samples. Kennedy et al. (1989) compared primary school children scoring in the clinical range (i.e.,  $> 19$ ) on the CDI to grade- and gender-matched youngsters who were nondepressed but fearful, and to other matched youngsters who were neither depressed nor fearful. The groups were compared on peer ratings (i.e., "like to play with"), peer nominations ("like to play with" and "like to

work with”), children’s self-reports of their likely behavior in conflict situations (i.e., aggressive, assertive, or submissive), and scores on a social skills inventory. Of the three groups, the depressed youngsters scored as least socially skilled and received the lowest peer ratings, fewest positive nominations, and most negative nominations; more than 75% of the depressed children were classified as either rejected or isolated (vs. 30% in the other groups). The comparison with highly fearful children contributes useful data on the question of specificity (i.e., whether social skills deficits may be correlates of child psychopathology in general or whether they may be rather specific to depression). The authors view their findings as supporting “a strong link between childhood depression and social difficulty” (p. 571).

Goodyer, Wright, and Altham (1990) had judges rate the quality of recent friendships among emotionally disturbed children ( $\frac{2}{3}$  anxious,  $\frac{1}{3}$  depressed) and nondisturbed youths aged 7–16. Recent stressful life events were also assessed. “Moderate to poor friendships” were associated with depression *and* with anxiety disorders, relative to control children; however, the risk of both types of disorder was much more significantly increased by the presence of *both* moderate to poor friendships *and* stressful life events. On the question of specificity, little evidence indicated that friendship problems or life events were more closely related to depression than to anxiety disorders.

Kazdin, Esveltd-Dawson, Sherick, and Colbus (1985) assessed depressive symptoms through both parent-report and child self-report measures, and then had trained observers record social activity (e.g., playing games with others), solitary activity (e.g., working alone), and affect-related expression (e.g., smiling, frowning). Children with DSM-III depression diagnoses showed less affect-related expression than children with other diagnoses, but the groups did not differ on other observational measures. Observer ratings of both affect-related expression and social activity were negatively

correlated with parent-report depression scores, but no observational measure correlated with any child-report depression score. The significant findings that were obtained are consistent with reports that depressed *adults* show low levels of certain social behavior (e.g., eye contact) and affect-related expression.

Puig-Antich et al. (1985a, 1985b) studied psychosocial functioning during (Study a) and after (Study b) depressive episodes among prepubertal children. In Study a, endogenous and nonendogenous depressed groups showed deficits, compared to both normal and “neurotic” control groups on certain aspects of mother–child, sibling–child, and child–peer relationships (e.g., being teased by peers). Of the original 52 depressed children, 21 were reassessed by Puig-Antich et al. (1985b) after they had recovered from their depressive episode. This generated data on an important clinical question: state dependence, that is, the extent to which deficits might depend on the depressed state as opposed to being stable manifestations of the depressive child’s social style. Puig-Antich et al. (1985b) found that after the depressive episodes, the child–mother, child–father, and child–peer difficulties noted earlier were ameliorated somewhat, but formerly depressed children remained significantly inferior to normal controls in aspects of all three relationships (i.e., communications skills with mothers, tension in relationships with fathers, and being teased by peers). This suggests that some of the social deficits associated with child depression may reflect relatively enduring characteristics of depression-prone children, above and beyond the transient effects of depressed states.

The Puig-Antich et al. (1985a, 1985b) studies focused on social relationships outside the clinic; Asarnow (1988) assessed peer status *within* an inpatient clinic. Asarnow compared children with DSM-III depressive disorders to others with externalizing disorders (conduct disorder, attention deficit disorder), and still others with concurrent depressive and externalizing disorders. Sociometric interviews revealed

significant group differences: Depressed children, compared to the other two groups, had significantly *higher* likability and peer acceptance scores and significantly *lower* peer rejection scores. Social competence problems appeared to be most pronounced in externalizing children, including those whose externalizing behavior was combined with depression. This suggests the possibility that the social deficits often identified in depressed children in other studies may reflect the presence of a co-morbid group (i.e., children in the "depressed" groups who are both depressed and externalizing). Clearly, in future research, there will be an informational advantage in distinguishing such co-morbid subgroups from depression-only groups. Finally, we must note that Asarnow's data are of uncertain relevance to the social behavior and relationships of depressed children outside the unusual setting of an inpatient hospital unit.

The studies on social competence suggest that child and adolescent depression may be associated with a number of social competence deficits and with poor peer relationships. The evidence is mixed with regard to three issues:

1. *Specificity*—whether the deficits are linked to depression specifically or psychopathology more generally, as reflected in diagnoses other than depression (several findings do point to depression-specificity, but studies differ as to *which* deficits are depression-specific).
2. *State-dependence*—whether the deficits are evident only during states of depression or characteristic of depression-prone youngsters even when they are not depressed.
3. *Co-morbidity*—whether low levels of social competence in depressed groups are accounted for by subgroups who also meet criteria for other diagnoses, especially conduct disorder and attention deficit disorder.

As we shall see, these three issues remain unresolved not only for social competence

but also for academic and behavioral competence.

#### *Academic competence—Research with nonclinical samples*

Data relevant to academic competence come from a number of studies. Strictly speaking, these studies involve assessments of academic or cognitive *performance*, which may or may not offer a veridical picture of actual competence. In general, the evidence shows that depressed children perform less well on various academic tasks than do nondepressed youngsters of similar age or grade level. In the Fauber et al. (1987) study cited earlier, analyses with the 11–15-year-olds revealed that CDI scores were negatively correlated with school grades and with self-, mother-, father-, and teacher-rated cognitive competence. The Proffitt and Weisz (1992) study cited earlier also reported a significant negative correlation between CDI scores and academic grades for fourth and fifth graders. The Forehand et al. (1988) study of 11–14-year-olds, cited earlier, indicated that both grade point average and teacher-rated cognitive competence were strongly negatively correlated with CDI scores. In addition, studies by Blechman, McEnroe, Carella, and Audette (1986), Cole (1990, 1991), and Patterson and Stoolmiller (1991), all discussed later, tend to support the findings reported here.

#### *Academic competence—Research with clinical samples*

In the Puig-Antich et al. (1985a) study cited earlier, both school behavior and academic achievement were reported by parents to be significantly impaired in the two depression groups (endogenous and nonendogenous) *and* in the psychiatric control group of non-depressive neurotic disorders, with these three groups not differing significantly from one another. This casts some doubt on the specificity of academic deficits to depression. The Puig-Antich (1985b) study of depressed children *after* recovery from a

depressive episode suggested that the academic deficits, in addition to being nonspecific with respect to depression, were state-dependent. After recovery the 21 children "... showed no significant difference from normal children in any aspects of school functioning, and they were significantly better than the nondepressed children with emotional disorders in behavior, achievement, and relationship with the teacher" (p. 513).

To summarize, findings generally support a linkage between depression and low levels of academic performance, but most evidence comes from correlational studies with nonclinical samples. The two-part study of a clinical sample, by Puig-Antich and colleagues, suggests that academic deficiencies may not be specific to depression and may be state-dependent, at least in clinically depressed children.

#### *Behavioral competence—Research with nonclinical samples*

We turn now to evidence on behavior and conduct problems among depressed youngsters. The question of whether depressed youth show high levels of conduct or behavior problems relates to a long-running debate on whether or not young people express their depression in "masked" form, via "depressive equivalents" such as unruly behavior (see Carlson & Cantwell, 1980). Despite widespread interest in this debate, we have found only a few relevant studies, two involving nonclinical samples. Jacobsen et al. (1983) collected Conner's Teacher Rating Scale scores on the Conduct Problem, Inattentive-Passive, and Hyperactivity subscales, for second to seventh graders. For the full sample, teacher, peer, and self-report depression measures were positively correlated with these problem ratings (the one exception, the Hyperactivity-Peer Nomination Inventory for Depression correlation, approached significance). The Proffitt and Weisz (1992) study cited earlier included assessment of conduct grades for the 121 fourth and fifth graders sampled.

These grades were *not* significantly correlated with CDI scores.

#### *Behavioral competence—Research with clinical samples*

The only relevant study we have found that involves a clinical sample is Carlson and Cantwell's (1980) report on 7-17-year-olds diagnosed with either primary affective disorder (most with major depression), behavior disorder alone (i.e., primary attention deficit disorder and/or conduct disorder), or affective disorder plus behavior disorder. Major behavior problems were reported by parents for 68% of the behavior disorder-only group and for 75% of the co-morbid group, but for only 7% of the affective disorder group. Children's self-report data supported this pattern. The findings (reminiscent of those by Asarnow [1988]) suggest that conduct problems may not be pronounced among depressed groups if one excludes youngsters who are co-morbid for depression and conduct/behavior disorder.

To summarize, we have found relatively little empirical evidence on behavioral or conduct problems among depressed youngsters (i.e., little support for such "masked depression" or "depressive equivalents"). The modest evidence available is mixed regarding a linkage of depression and conduct problems, and the one clinical sample study suggests that where the linkage exists it may be accounted for by a co-morbid subgroup.

#### *Multiple competence dimensions considered concurrently*

Some studies have combined data on more than one competence dimension in ways that complement the research already described. The results are generally consistent with those already described. For example, Blechman et al. (1986) sampled third to sixth graders from 24 elementary classrooms, using math achievement test scores to measure academic competence and peer ratings to measure social competence. Chil-

dren high on both social and academic competence scored higher than the group that was low on both competence dimensions on peer-rated happiness, and the high-high group scored lower than the low-low group on both peer-rated and self-reported depression.

In two large-sample studies, Cole (1990, 1991) reported on the relation between child depression and various competence indicators. In Cole (1990), self-report, peer, and teacher measures of depressive symptoms, social competence, and academic competence were obtained for 750 fourth graders. Cole found strong negative correlations between depressive symptoms and both competence dimensions. Moreover, children showing low social and academic competence had more depressive symptoms than children scoring low on only one competence dimension, and children low in one competence domain were more depressed than children who were not low in either domain. Social and academic competence thus appeared to be both separately *and additively* related to depression. One interpretive problem is that data from self- and other-report measures of competence were combined, making it difficult to disentangle the depression-competence relation and the depression-self-perception relation.

This interpretive problem does not arise in Cole (1991). In this study, self-reports of depression (CDI) were obtained together with peer-nomination measures of competence in five areas: academic, social, conduct, sports, and physical attractiveness, for 1,422 third and fourth graders. Peer nominations in all five domains were negatively correlated with self-rated depression. Moreover, in further support of an additive model, both the mean CDI score and the probability of exceeding the depression cutoff (CDI > 19) increased rather steadily in conjunction with increases in the number of domains in which children were rated incompetent. Of those children rated incompetent in no domains, only 7.7% scored above the cutoff, but of those rated incompetent in all five domains, 45.5% scored above the cutoff. Neither of the Cole

studies involves performance measures of competence (i.e., all the measures reflect various individuals' perceptions of competence). It is possible that some of these perceptions are influenced by the demeanor of depressed children, which may lead to underestimates of *actual* competence as it might be assessed on performance tests. Nonetheless, these thoughtful studies by Cole suggest important hypotheses regarding the depression-competence link in childhood and the possible additivity of the relationship.

In a different approach to the same issue, Patterson and Stoolmiller (1991) tested a "dual failure model" for depressed mood in boys. With structural equation modeling, the investigators used multiple measures to form a depression construct, an academic skills construct, and a good peer relations construct for three separate samples. Path coefficients showed the relation between peer relations and depression to be significant in all three samples, but the path from academic skills to depression was not significant across all samples. Nonetheless, the *a priori* model including both peer relations and academic skills accounted for 51-68% of the variance in the depression construct.

To summarize, the studies of combined competence dimensions add to our thinking the possibility that depression may be most pronounced in youngsters who have multiple competence deficits. When these studies are combined with the studies summarized earlier, this picture emerges: Of the three competence dimensions, social competence deficits are the most strongly linked to depression in young people, with numerous findings also supporting a linkage between academic competence and depression, but with mixed, sparse evidence on the question of conduct problems in depression. Issues of specificity, co-morbidity, and state-dependence remain unresolved in this research, particularly for the relation between conduct problems and depression.

### *Developmental concerns*

In general, the competence studies have not been developmental in focus. Most involved

samples that were relatively homogeneous for age, and for most of the remainder age differences were not a major focus of the analyses. A few studies offered developmental tidbits; for example, Goodyer et al. (1990) found that friendship problems were significantly linked to both anxious and depressive disorders in prepuberty but were significantly more likely to be associated with anxious disorders in postpubertal cases. Unfortunately, due to differences in sample and design features, none of the developmental hints in any study were replicated in any other study. Thus, we still know little about whether the relation between depression and various competencies differs with age or other aspects of developmental level. Moreover, the absence of longitudinal studies hampers our ability to disentangle cause and effect. Skills deficits may well foster the development of depression over time, but depression may also interfere with both skills development and performance in many areas and produce a variety of observed deficits. Longitudinal research will be helpful in the task of teasing apart causal alternatives.

### *Therapeutic implications*

Although the findings do not generate a clear developmental picture, they do raise important issues regarding therapy. The data point to significant deficits among depressed youngsters in certain competence domains—social, academic, and possibly behavioral. The findings suggest the *possibility* that therapists may need to include skill-building activities in their therapeutic regimen. However, several issues need to be addressed in research before any guidelines for the appropriate nature and role of skills training within psychotherapy can be developed. First, the causal question outlined in the preceding paragraph needs to be addressed empirically. The primacy of skills training in psychotherapy should depend in part on whether skills deficits are causes or effects of depression in young people. In addition, the issues of specificity, state-dependence, and co-morbidity remain unre-

solved, ruling out clear conclusions as to which characteristics of depression-prone youngsters need to be addressed in therapy. For example, identification of competence deficits that persist beyond depressed states might help set the stage for inclusion of skills training in therapy; however, if all significant competence deficits proved to be state-dependent, then targeting depressed mood alone might ameliorate performance deficits independently of any specific skills training.

### **Accuracy of Self-Perceptions and Perceptions About Others**

The studies reviewed thus far show that depressed children have numerous negative perceptions concerning self and others *and* that some of those perceptions may be valid. Here we summarize research on the extent to which depressed youngsters' negative cognitions represent distortion versus realistic appraisal of the facts. We consider four domains: (a) negative self-perceptions in the social domain, (b) negative self-perceptions in the academic/cognitive domain, (c) negative self-perceptions in the behavioral domain, and (d) negative perceptions of others (i.e., parents and peers).

### *Social competence*

As noted earlier, a strong linkage has been established between depressive symptoms and self-perceived lack of social competence and low peer acceptance (Altmann & Gotlib, 1988; Kennedy et al., 1989; Weisz et al., in press; Wierzbicki & McCabe, 1988). From such findings, many investigators have inferred the operation of distorted social information-processing mechanisms in depressed young people. However, an alternative view is that depressed youngsters are merely acknowledging very real social difficulties. To address this issue, Proffitt and Weisz (1992) examined the relation between self-rated social competence and teacher-rated sociometric status in a sample of fourth and fifth graders. The more depressed youngsters did indeed rate them-



selves as less socially competent. However, teacher ratings showed a similar pattern. Analyses of accuracy scores (i.e., actual-perceived competence) failed to reveal negative biases among mildly depressed children, nor did these accuracy scores correlate significantly with CDI scores. The evidence thus suggested that depression was associated with *accurate*, albeit negative, self-perceptions of social competence. Indirect support for these findings was generated by the Fauber et al. (1987) study described earlier. The investigators reported significant agreement among adolescent, parent, and teacher ratings of social competence. These ratings also correlated negatively with adolescents' CDI scores.

Although we know of no other investigators who have directly compared perceptions and social competence in this manner, a growing body of research, summarized earlier, does attest to the presence of objective social skills deficits and peer rejection in mildly and clinically depressed youngsters (Altmann & Gotlib, 1988; Blechman et al., 1986; Jacobsen et al., 1983; Kazdin et al., 1985; Kennedy et al., 1989; Puig-Antich et al., 1985a, 1985b). Researchers have also shown that depressive affect may elicit negative responses from peers and may interfere with prosocial behavior (Kazdin, Esveltd-Dawson, & Matson, 1982; Peterson et al., 1985). One study (Asarnow, 1988) has countered these findings, but that study involved social behavior and relationships within an inpatient psychiatric unit; it is not clear whether or not the findings generalize to settings and groups outside the hospital.

#### *Academic/cognitive competence*

Studies of distortion versus actual deficit in the academic/cognitive domain have yielded contradictory results. On the one hand, a consistent association has been documented between depression and low self-perceived academic competence (Asarnow & Bates, 1988; Asarnow et al., 1987; McGee et al., 1986; Weisz et al., in press). Moreover, many studies have shown a relationship between depressive symptoms and

tendencies toward negative self-evaluation, low self-expectations, and stringent standard setting on cognitive tasks (Kaslow et al., 1984; Kendall et al., 1990; Meyer et al., 1989). However, direct comparisons of objective and subjective levels of competence have generated conflicting results. Some have found a correspondence between negative self-perceptions and actual cognitive or academic difficulties in mildly or moderately depressed youngsters (Fauber et al., 1987; Kaslow et al., 1984; Proffitt & Weisz, 1992). Others have found disparities between self-evaluations and actual performance. For example, Meyer et al. (1989) found consistently negative self-expectations and evaluations in depressed children even though their academic achievement and cognitive task performance resembled that of their peers.

The cognitive distortion hypothesis received additional support in the Kendall et al. (1990) study cited earlier. Self-perceptions and teacher ratings of children's performance were compared across a variety of competence domains (e.g., academic performance, popularity, athletic ability). Although the composite scale precludes discrimination of specific domains, results indicated that the depressed children's self-perceptions were substantially more negative than their teachers' ratings. Furthermore, intraclass correlations showed substantial child-teacher agreement for nondepressed children but poor agreement for depressed children.

#### *Behavioral competence*

We have found little evidence on the validity of depressed children's cognitions in the behavioral or conduct domain. As already noted, Jacobsen et al. (1983) found significant correlations among self-, teacher-, and peer-reports of depression and three teacher-rated conduct problem dimensions, but the researchers did not assess children's perceptions of their own conduct. Proffitt and Weisz (1992), who did carry out such assessments, found that mildly depressed children reported negative self-perceptions of their

conduct, but that teacher ratings of child conduct were not significantly correlated with children's CDI scores. Furthermore, analyses of accuracy scores (actual-perceived) revealed a marginally significant trend for negative bias in the depressed group, indicating an underestimation of their actual conduct/behavioral competence.

### *Interpersonal cognitions*

There is considerable evidence that depressed children and adolescents have negative perceptions regarding their family and peers (e.g., Armsden et al., 1990; Kaslow et al., 1984). Few studies have directly examined the accuracy of these negative representations. In one of the rare attempts, Parker (1981) compared adolescents' scores on a measure of *recall* of parenting strategies during childhood to the scores of their mothers and siblings. Depressed adolescents tended to report more negative maternal child-rearing practices than nondepressed groups, but these reports were substantiated by other family members. Likewise, comparisons between children's and adolescents' cognitive representations of their parents (Armsden & Greenberg, 1987; Armsden et al., 1990; Kaslow et al., 1984) and the actual interaction patterns in families of depressed children and parents (e.g., Amanat & Butler 1984; Cole & Rehm, 1986) offer some support for the accuracy of such negative internal working models.

The accuracy of depressed children's representations of their peers has not yet been directly evaluated, to our knowledge. However, the general literature on peer relationships in depressed children does suggest that peers may have negative attitudes toward depressed children and may tend to reject them more often than nondepressed contemporaries (Jacobsen et al., 1983; Kennedy et al., 1989; Peterson et al., 1985).

### *Developmental concerns*

Although the literature does not yet provide information on age-related differences in the accuracy of depressive cognitions, it

seems essential to study this issue within a developmental framework. Research has shown that increases in the accuracy of self-evaluation may not take a linear path and that "certain environmental events may well cause disruptions in the ability to assess oneself accurately" (Harter, 1988, p. 128). In the case of academic self-concept, correlations between perceived and actual scholastic competence in normal children move from negligible among first and second graders to very strong among sixth graders (see Weisz, 1986b); however, "this relationship takes a nosedive in the seventh grade for students who make the shift to a new educational environment" (Harter, 1988, p. 129). Such changes must be taken into account when determining whether inaccuracies in depressed groups reflect normative or pathological patterns. More broadly, such observations underscore the importance of expanding our conceptualization of development beyond chronological age, to include other maturational variables such as exposure to life transitions and achievement of developmental milestones.

As noted earlier, we need developmental models addressing the roles of actual competence and cognitions about one's competence. These models will need to include bidirectional and alternative pathways between cognitions and depression. For example, developmental relationships could involve (a) a direct impact of children's cognitions on concurrent symptoms or a predisposition to subsequent depression; (b) an indirect link, whereby negative cognitions interfere with the development of competence in various areas, which in turn heightens vulnerability to depression across time; (c) mirroring, such that children with real competence deficits become increasingly aware of those deficits and thus increasingly susceptible to depression; or (d) reverse causality, with early depressive episodes affecting children's future cognitive development (Cicchetti & Schneider-Rosen, 1986; Hammen, 1990).

### *Therapeutic implications*

The controversy between cognitive-distortion and skills-deficit models of depression

in young people is not yet resolved. As various researchers (Kendall et al., 1990; Proffitt & Weisz, 1992) have noted, knowledge about the precise nature of depressed children's difficulties should guide development of interventions. Excessive cognitive-distortion would call for therapeutic strategies to promote more realistic self-appraisals. In contrast, actual social, academic, or behavioral difficulties in depressed children *might* call for treatment that includes a skills-building component, but the issues bearing on this option are complex.

To illustrate the complexity, let us consider the potential interplay among biased cognitions, skills deficits, and depressive phenomena. One plausible explanatory mechanism would involve a pathway from cognitive biases to depressive symptoms and actual functional impairment. That is, negative perceptions of self and others may be a causal factor in the onset of disturbances in the social, academic, or behavioral domains. In such a case, treatment that targets concrete, albeit realistic, deficits may be futile, as enduring and pervasive cognitions may serve to perpetuate incompetence. On the other hand, if self-denigrating cognitions, negative representations of others, and depressive affect result from a veridical perception of reality, attempts to modify cognitive processes would be undermined by continuous environmental feedback that confirms original assumptions. Finally, some evidence suggests that both negative cognitions (Asarnow & Bates, 1988; McCauley et al., 1988) and skills deficits (Puig-Antich et al., 1985a) may be state-dependent, not stylistic. If mood disturbance is primary, affect-oriented interventions may be essential to complete recovery and may lead to secondary improvement in the cognitive and behavioral domains. Until more sophisticated models are available, the most effective therapeutic strategy may involve the use of multidimensional programs that reflect the complexity of the depressive experience (Proffitt & Weisz, 1992). Finally, we must recognize that there are individual and subgroup differences in the etiology and dynamics of de-

pression. The cognitive-distortion versus skills-deficit controversy may not yet be resolved because each alone, or both in unison, may have relevance for different subgroups of depressed children.

### Coping Styles

We turn now to studies of coping. Depressed adults have been found to show dysfunctional coping styles (e.g., Billings & Moos, 1984). This may be true of child and adolescent populations as well (Holohan & Moos, 1991), but there is very little research on the coping styles of depressed youngsters. What little we know falls into the three areas reviewed here.

#### *Interpersonal problem solving*

Studies of interpersonal problem solving bear a direct relation to coping. A few such studies have suggested possible deficits in depressed youngsters. For example, studies by Doerfler, Mullins, Griffin, Siegal, and Richards (1984) and Mullins et al. (1985) indicated that depressed children did not differ from their nondepressed peers in the *quantity* of alternative strategies generated, but that depressed children generated more irrelevant strategies (i.e., responses that bore no apparent relation to achieving problem resolution). In addition to supporting these findings, Quiggle, Panak, Garber, and Dodge (1989) found that depressed children were less likely than their nondepressed peers to use assertive responses.

#### *Coping with stressful life events*

In a study addressing styles of coping with stressful events, Asarnow et al. (1987) had 30 8–12-year-old child psychiatric inpatients generate alternative solutions to picture cards depicting three stressful situations: (a) child faces parents after getting in trouble at school, (b) parents fight and father is leaving with a suitcase, and (c) child's mother dies. No characteristic coping pattern distinguished depressed children from the other inpatients; however, depressed children who also met criteria for conduct

disorder generated elevated rates of physically aggressive coping.

Compas, Malcarne, and Fondacarna (1988) examined the relation between coping style and parent-report and child-report problem profiles for 10–14-year-olds. The young subjects described two stressful events, one interpersonal and one academic, listed all the ways they might deal with the event, and then noted each approach they had actually used. Coping styles were categorized via Folkman and Lazarus's (1980) model, which distinguishes problem-focused coping (acting on the stressor to modify it) from emotion-focused coping (acting to modify one's emotional state). For girls but not boys, depression scores on the self-report checklist were positively correlated with number of emotion-focused strategies and negatively correlated with number of problem-focused strategies. Also for girls only, depression scores on the parent checklist were negatively correlated with number of problem-focused strategies.

Ebata and Moos (1991) examined coping responses and adjustment in four groups of adolescents: healthy controls, rheumatic disease, conduct problems, and depression. Adolescents were asked to identify their most important stressor in the past year and to rate how often they used each of the coping responses listed in an inventory. Coping styles were categorized into a "hierarchical broad-band structure based on focus (approach vs. avoidance) and method (cognitive vs. behavioral)" (p. 36). Adolescents who used "less problem solving (approach), less positive appraisal (approach), more logical analysis (approach), more cognitive avoidance (avoidance), and more resigned acceptance (avoidance), were more depressed and anxious" (p. 46). These findings support those of Compas et al. (1988): Depression was positively correlated with emotion-focused strategies (Compas et al.) and cognitive avoidance (Ebata & Moos), and negatively correlated with problem-focused coping (Compas et al.) and two of four approach methods (Ebata & Moos). In further support of this pattern, Glyshaw, Cohen, and Towbes (1989) studied five types of

coping among adolescents and found that problem solving predicted low levels of depression. Taken together, these findings support the notion that problem-solving coping, as opposed to emotion-focused or "secondary control" coping, is associated with lower levels of depression in young people.

### *Affect regulation*

Several studies have examined differences between depressed and nondepressed youngsters in a class of behavior that appears closely related to coping (i.e., affect regulation). The findings may help us begin to identify strategies that depressed and nondepressed children use to adjust to and/or modify negative moods. For example, Garber, Braafladt, and Zeman (1991; Study 1) compared depressed 8–17-year-olds to youngsters of similar age in a medical comparison group. Each child was asked to generate emotion-regulating strategies in regard to five different states: sad, mad, scared, happy, and "just OK." The coping strategies were categorized based on the conceptual models of Folkman and Lazarus (1980) and Beck (1976) and the coding systems of McCoy and Masters (1985), Band and Weisz (1988), and others. In response to negative affect, depressed children emphasized active avoidant strategies (e.g., walking away) and negative behaviors (e.g., aggression), whereas nondepressed children emphasized problem-focused and active-distraction strategies (e.g., playing with a friend). When asked what they would do to feel better than "just OK," depressed children were much more likely than their nondepressed peers to choose doing nothing or to use passive avoidant strategies (e.g., going to sleep).

### *Developmental concerns*

Compas et al. (1988), in addition to the findings already reported, also found an age-related increase in the number of emotion-focused strategies generated and used, but no age difference for problem-focused

coping. Band and Weisz (1988), using a different but comparable model of coping, found a similar age-related pattern for "secondary control coping" (similar to emotion-focused coping; see Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Blackburn, 1984a, 1984b, for a description of the primary-secondary model of coping used in the Band-Weisz study). Such findings suggest the possibility that emotion-focused and secondary control strategies may be too abstract, subtle, and unobservable for young children to readily assimilate into their coping repertoire. This is a useful starting point, but it is only the beginning of a developmental perspective. We need research with depressed and nondepressed samples that are subdivided into different groups, based on developmental variables of interest; such research may tell us whether or not there are qualitative differences between depressed and nondepressed children's coping styles that are specific to particular developmental levels.

### *Therapeutic implications*

Such developmental research may help inform our efforts at intervention. For example, if research continues to suggest that emotion-focused and secondary control coping are beyond the range of assimilation for younger children, then we will have to consider the possibility that interventions aimed at teaching young depressed children to use these less concrete strategies may be developmentally inappropriate and counterproductive. We need a clearer picture of the causal/developmental connection between emotion-focused coping and depression. Does less active coping foster depression? Or does depression lead to less active coping, perhaps by draining energy and motivation? If the former, then therapies may need to directly address coping style; if the latter, perhaps not.

Finally, affect regulation findings such as those of Garber et al. (1991), if well replicated, would suggest that therapeutic interventions with depressed children may need to include efforts to alter their more general

passivity. More generally, depressed children may need help in identifying and practicing activities that give them mastery over their moods. A developmental dimension in the affect regulation research should help us find ways to fine-tune interventions to fit the needs and the coping capacities of treated youngsters at different ages.

### **Overview of the Findings: On Cognition, Competencies, and Coping**

We have surveyed evidence on potentially important correlates of child and adolescent depression in the areas of cognition, competence, and coping. The evidence points to differences between depressed and nondepressed youngsters in cognitive processes, such as attributional style and schema construction and use, and in cognitive products, such as beliefs about self and others. Such beliefs include negative views, by depressed young people, of their own competence in social, academic, and conduct domains, and negative representations of family and peer relationships. Are these beliefs depressogenic distortions or veridical assessments by depressed youngsters of their own abilities and of social realities? The evidence reviewed here suggests that the beliefs are more veridical in some domains (e.g., social and academic competence, family relationships) than in others (e.g., conduct problems), but more evidence is needed before we can speak with confidence. Our survey of evidence on coping suggests that depression may be associated with relatively passive coping styles and that active problem-focused or primary control coping is more likely to be found in nondepressed youngsters. Interpretation of the findings in all the areas surveyed is complicated by methodological and conceptual concerns, to which we turn now.

### **Methodological and Conceptual Issues**

Before the research on cognition, competencies, and coping can generate a clear picture of depression and specific recommendations for intervention, investigators will

need to address systematically the questions of specificity, state-dependence, and comorbidity, discussed earlier. As these questions receive sustained attention, our picture of child and adolescent depression will be brought into sharper focus, and our capacity to design optimum interventions will be enhanced.

A broad issue implicit throughout this review pertains to how depression should be conceptualized and studied. The studies surveyed can be grouped rather cleanly into two camps: *categorical* and *dimensional*. Categorical investigators identify groups labeled "depressed" and compare these to various "nondepressed" groups. Dimensional investigators form general population samples, usually school children, and assess the relation between depression scores on some quantitative scale and various cognitions or behaviors. Beyond their methodologies, the two camps offer rather different views of depression. The categorical perspective construes depression as a diagnostic entity or syndrome that some youngsters have and others do not have. The dimensional perspective construes depression as a person characteristic more or less normally distributed in the population. The categorical view is traditionally associated with psychiatry, clinical psychology, and the study of "psychopathology," whereas the dimensional view is associated with personality and (to some extent) developmental psychology and the study of "the normal range of functioning."

The two perspectives (somewhat caricatured here) may each contribute something of value; it is not our purpose to argue in favor of one or the other. However, the kinds of information generated by the two approaches may serve rather different ends. Because psychotherapy is most likely to be used with extreme groups, categorical research seems most relevant to planning such intervention. Dimensional research findings may promote our understanding of depression as a person characteristic in the general population and may help inform the development of preventive interventions, but the relevance of such findings for psy-

chotherapy with seriously depressed youngsters is not entirely clear. Relatively little of the available evidence is categorical, and our review reflects this fact. Moreover, we have stretched to discuss therapeutic implications, even when the research base for these inferences was largely dimensional. We urge caution as readers absorb these inferences. We also urge investigators to meet the need for a richer base of data on clinically depressed children and adolescents.

### Developmental and Therapeutic Issues

From a developmental perspective, the literature reviewed here is disappointing. Both the research and the theoretical models are strikingly adevelopmental. In the research on cognition, for example, a number of the investigators appear implicitly to assume an ontogenetic continuity in developmental processes, which developmental research clearly belies, and an ontogenetic continuity in the *relation between* cognition and depression, which we believe to be unlikely. Indeed, much of the work involves downward extensions of adult research and theory.

Much could be contributed, theoretically and empirically, by programmatic efforts to link the study of the cognition-depression linkage to the rich body of theory and research on cognitive development. It is certainly possible, for example, that some cognitive processes (e.g., overattribution of personal causality for negative outcomes) reflect normal limitations inherent in certain cognitive-developmental stages (e.g., preoperations, when such errors are common) but may reflect incipient pathology if they persist into later developmental periods. In general, we need to know both (a) how depression-linked cognitions (processes and products) change with development, and (b) how the *relation* between those cognitions and depression changes with development. The work reviewed here, unfortunately, sheds little light on either question.

The same concern could be raised with regard to the other areas reviewed here. The research on child and adolescent depression

as it relates to competence deficits, accuracy of cognitions about self and others, and coping has generally been conducted on groups that are rather homogeneous for age or in ways that attend little to the impact of age or other developmental variables. As a result, this research, too, tells us little about developmental differences in the relation between depression and these cognitive and behavioral phenomena. Moreover, few researchers have addressed the question of developmental causality, that is, the potentially *reciprocal* impact of these variables and depression on one another.

The developmental complaint must be extended further, to encompass the modest base of therapy outcome research to date. Outcome researchers have not directly compared the efficacy of various techniques for children at different developmental levels. More importantly, most of the techniques appear to have been largely downloaded from the adult treatment literature, with little accommodation to the vast literature on developmental differences in children's capacities. For example, the treatment procedures tend to be heavily cognitive, but they do not seem to have been shaped in any direct way by cognitive-developmental literature on children's conceptual, comprehension, processing, recall, or generalization capacities. It may thus be no fluke that the mean posttreatment effect size for child samples was half that for adolescents, or that follow-up assessments with children showed no significant therapeutic effect.

The research base is too thin to support

any strong conclusion in this regard, but there can be little question that therapy outcome research is currently too isolated from other potentially relevant lines of research with children and adolescents, including developmental studies and the research on cognitions, competencies, and coping behavior reviewed in this article. The isolation poses a risk that therapy will be planned with insufficient information about whether or not the cognitive demands of the procedures are appropriate to the capacities of the treated youngsters, and even whether the cognitions, skills, and behaviors to be addressed actually represent the most prominent correlates of depression for the age groups treated.

In conclusion, we have surveyed and critiqued a substantial body of research and theory. We are concerned that the work on cognitive, competence, and coping correlates of depression is both procedurally developmental and poorly connected to mainstream developmental research and theory. The same appears to be true of the psychotherapy research thus far, and that research seems strangely isolated from the relevant lines of research reviewed here. The most compelling need identified here is for integration and synthesis; the next generation of research needs to entail a three-way partnership involving basic developmental research linked to research on relations between depression and various cognitive and behavioral processes, with both kinds of research informing the development and refinement of interventions.

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