Perceived Control and Coping with Stress: A Developmental Perspective

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This article discusses developmental changes in perceptions of control, the relationship between perceived control and strategies used by children to cope with stress, and the interaction between perceived control and coping in their association with psychological adjustment and disorder. Developmental research on children's perceptions of control has identified both changes and consistencies in contingency, competence, and control beliefs during childhood and early adolescence. Developmental changes in coping have also been documented, with problem-focused skills emerging during childhood, and more rapid development of emotion-focused coping skills during later childhood and early adolescence. Studies have shown that perceptions of control are related to the ways that children and adolescents cope with stress. The implications of this research for interventions aimed at enhancing children's problem-solving and coping skills are discussed.

Josh, an 11-year-old boy, and Amy, an 11-year-old girl, both share the common experience of being teased by other children. They find such experiences stressful, but they differ considerably in their beliefs about the controllability of these problems and in their actions to try to deal with them. Although Josh believes children in general can stop others from teasing them, he sees

himself as much less capable than other children of stopping this behavior and he does not believe he can solve problems like this even if he tries. He attempted to cope with a recent teasing by explaining to the children who were teasing him that he wanted to be their friend, by walking away from the situation, and by thinking about something else in order to forget the problem. On a standard measure of depressive symptoms, Josh reported an extremely high level of distress, more than two standard deviations above the mean for his age.

In contrast, Amy indicated that solving problems like these depends to a great extent on what children do, that she felt she was more capable than most children her age at solving these types of problems, and that she could make things better if she tried. She reported taking four steps to try to solve a recent problem with another girl: She asked the girl who was bothering her to leave; she told a teacher that the girl was bothering her, hoping that the girl would apologize and leave; she tried to ignore the girl, again aiming to get her to go away; finally, she waited until the girl was occupied with something else and then she left the situation herself, hoping that the girl would not be able to find her. Amy reported virtually no depressive symptoms.

The experiences of these two children illustrate the potential importance of control-related beliefs for understanding the ways that children perceive stressful experiences in their lives, the ways that they attempt to cope with stress, and symptoms of psychological distress that are associated with stress. Beliefs about the controllability of stressful events could influence the degree to which an individual attempts to master or change the stressful circumstances, as opposed to trying to tolerate or adjust to adverse circumstances. Further, perceptions of personal control may themselves be enhanced or decreased as a result of the perceived effectiveness of personal efforts to change conditions that are threatening or challenging to the individual.

The role of control beliefs in the appraisal of and coping with stress during childhood and adolescence represents an important context for the study of perceived control. There are both heuristic and applied research questions concerning the relation between cognitive appraisals of the controllability of stressful events and coping with such events, the developmental course of perceptions of control and coping, and the way these factors are related to emotional and behavioral maladjustment. This area of research is addressed in the present paper in three steps. First, the literature concerned with developmental changes in perceived control is summarized. Second, studies of coping with stress in children and adolescents are reviewed, highlighting developmental differences and consistencies in coping. Finally, the paper discusses directions for future research on the control–coping relationship from a developmental perspective and the implications of this research for interventions to enhance children's coping with stress.

Developmental Perspectives on Control

Research studies reflect a variety of perspectives on the basic question about how children's perceptions of control develop, yet several themes have emerged (see Skinner, Chapman, & Baltes, 1988, and Weisz, 1986b, for more extended discussions of these themes). Three types of cognitive appraisals or beliefs about personal control appear important: (a) Judgments of contingency (also labeled means–ends relations or response–outcome expectancies) reflect expectations about the degree to which outcomes are dependent on characteristics of people (e.g., effort or ability), external factors (e.g., luck or powerful others), or unknown factors. (b) Judgments of personal competence (also labeled agency beliefs or self-efficacy expectations) refer to expectations that the self is capable of producing or executing the necessary behaviors or other means to achieve a specific outcome. (c) Judgments of control refer either to expectations about one's own ability to produce a desired outcome (Skinner et al., 1988) or to the accuracy of one's beliefs in relation to the true controllability of the task (Weisz, 1986b); they are the result of varying combinations of contingency and competence beliefs in different situations or domains. For example, Weisz (1986a) found that contingency and competence beliefs were both related to control beliefs ($r = .43$ and $.47$, respectively), but were not related to one another. In order to keep the terminology clear, "perceptions of control" or "control beliefs" will be used to refer to the third type of belief described above, whereas "control-related beliefs" will be used as the general term that includes all three types of belief.

There are no simple, linear developmental changes in contingency, competence, or control beliefs that can be discerned from the literature. However, there are some developmental shifts that have been identified with considerable consistency across various studies. These shifts are tied to three developmental periods, roughly equivalent to ages 6–8 years, 9–11 years, and 11–13 years. In the 6–8-year-old group, judgments of contingency are grossly overestimated in situations in which no true contingency exists between behavior and outcome (Weisz, 1986b), and control beliefs differ primarily between those causes that are understood by the child ("known" causes) and those that are not understood by the child ("unknown" causes—Skinner, in press). In the 9–11-year-old group, estimates of contingency become more realistic, and beliefs about effort (a contingent cause) as opposed to noncontingent causes (luck and powerful others) become more differentiated. By ages 11–13, judgments about chance and skill-based tasks are clearly distinguished, and ability and effort are differentiated, introducing the possibility of perceiving an internal uncontrollable cause (e.g., low ability) for the first time (Skinner, in press).

The mean levels of contingency, competence, and control beliefs regarding

everyday events have not been found to change substantially with age. For example, in a sample of 8–17-year-olds referred for psychotherapy, Weisz (1986a) found a modest correlation between age and contingency beliefs ($r =$ .25) although competence and control beliefs were not related to age. However, the structure of these beliefs and their association with other variables (e.g., achievement and engagement in school) have been found to change with development (see Skinner, in press, for a review). Competence and control beliefs have been found to be negatively related to psychological maladjustment (e.g., children's self-reports of depressive symptoms—Weisz, Weiss, Wasserman, & Rintoul, 1987), and children's strong contingency and control beliefs have been found to predict decreases in parents' ratings of the children's behavior problems following psychotherapy (Weisz, 1986a).

Two rather contradictory developmental changes in control-related beliefs seem to occur at about the same time. First, recognition of true noncontingency in the world increases with age. Second, there is a decrease with age in the use of luck and powerful others, both uncontrollable factors, as explanations for the causes of outcomes in one's life, while attributions to personal effort, a controllable factor, remain stable from ages 7 to 12. These patterns can be reconciled when one considers that they are based on judgments of control made in reference to two very different types of tasks. The developmental increase in the recognition of noncontingency has been observed on truly uncontrollable tasks such as card games conducted in the laboratory or games of chance at a state fair (Weisz, 1980, 1981). In contrast, developmental decreases in the beliefs in luck and powerful others have been observed in studies of children's beliefs about the causes of success and failure on school achievement tasks, a domain in which some degree of control can realistically be achieved (Skinner, in press). Thus, it appears that developmental changes in the three control-related beliefs depend on task characteristics and the types of cognitive skills required to understand those tasks.

In summary, children move from overestimating contingency at age 6 to more realistic assessments by about age 11. During this time, they also begin to recognize the possibility of an uncontrollable internal cause, and they show a decrease in attributions to external factors such as luck and powerful others. However, mean levels of contingency, competence, and control beliefs do not tend to change substantially with age.

Developmental Perspectives on Coping

Several conceptual models have been used to guide research on the ways that children and adolescents cope with stress (for reviews, see Compas, 1987; Compas, Malcarne, & Banez, in press). These include the cognitive appraisal model (Lazarus & Folkman, 1984), the two-dimensional model of primary and

secondary control (Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Blackburn, 1984), the ego-psychology based model (Murphy & Moriarity, 1976), and the monitoring-blunting model (Miller, 1980). In spite of the apparent diversity in this area, all of these approaches emphasize a basic distinction between two fundamental types of coping, based on the intention or function of coping efforts. The first type of coping refers to efforts to change or master some aspect of the person, the environment, or the relation between them that is perceived as stressful. This type of coping has been labeled problem-focused coping (Lazarus & Folkman, 1984), primary control coping (Band & Weisz, 1988), Coping I (Murphy & Moriarity, 1976), approach coping (Altshuler & Ruble, 1989), problem solving (Wertlieb, Weigel, & Feldstein, 1987), or monitoring (Miller, 1980). The second type of coping involves efforts to manage or regulate the negative emotions associated with the stressful episode, and has been labeled emotion-focused coping (Lazarus & Folkman, 1984), secondary control coping (Band & Weisz, 1988), Coping II (Murphy & Moriarity, 1976), emotion manipulation, tension reduction, or avoidance (Altshuler & Ruble, 1989), emotion management (Wertlieb et al., 1987), or blunting (Miller, 1980). The terms *problem-focused* and *emotion-focused* coping will be used here.

Eight recent studies of the ways that children and adolescents cope with a wide range of stressors have examined developmental changes and stabilities in problem- and emotion-focused coping. All of these studies have found at least some evidence of a positive relation between reports of emotion-focused coping and age or some other marker of developmental level. Evidence for this developmental change has been found in samples of school-aged children ranging from 5 to 12 years old (Altshuler & Ruble, 1989; Compas, Banez, Malcarne, & Worsham, 1991; Curry & Russ, 1985; Wertlieb et al., 1987), children and adolescents ages 6–17 (Band, 1990; Band & Weisz, 1988; Compas & Worsham, 1991), and older children and young adolescents ages 10–14 (Compas, Malcarne, & Fondacaro, 1988). This developmental increase in emotion-focused coping has been found for coping with medical/dental stressors (Altshuler & Ruble, 1989; Band, 1990; Band & Weisz, 1988; Curry & Russ, 1985), interpersonal stressors (Compas, Banez, et al., 1991; Compas et al., 1988), and family stress (Compas & Worsham, 1991). Further, Compas and Worsham (1991) found that adolescents reported using more emotion-focused coping than did children, but that adolescents and young adults did not differ in emotion-focused coping, suggesting that these developmental changes level off by late adolescence.

In contrast to these consistent findings for emotion-focused coping, no consistent developmental changes have been found in problem-focused coping. Five studies found no change with age (Altshuler & Ruble, 1989; Band, 1990; Compas & Worsham, 1991; Compas et al., 1988; Wertlieb et al., 1987), two studies found a decrease in problem-focused coping with age (Band & Weisz, 1988; Curry & Russ, 1985), and one study found an increase in problem-focused

coping with age (Compas, Banez, et al., 1991). The decreases were both noted in reference to medical/dental stressors, while no changes in problem-focused coping were found in relation to a wider range of stressors. The only study to find an increase in problem-focused coping found this change in a sample of young children (mean age of 8 years) reporting on their efforts to cope with interpersonal stress.

In the broader literature on the development of children's problem-solving skills, which can be considered germane to the study of problem-focused coping (cf. Compas, 1987), there is evidence for increases in problem-solving skills in early childhood. For example, the capacity to generate multiple solutions to interpersonal problems emerges around age 4 or 5, and the ability to use means–ends thinking (i.e., identifying the sequence of steps needed to solve a problem) develops by ages 8–10 (Spivack & Shure, 1982). Further, interventions have been successful in improving children's problem-solving skills in children as young as preschool age (Spivack & Shure, 1982).

In general, studies of coping in children and adolescents suggest that the skills necessary for true problem-focused and emotion-focused coping emerge at different points in development. Problem-focused skills appear to be acquired earlier, with some evidence for the acquisition of problem-solving skills apparent by the preschool years and increased development of these skills until approximately ages 8–10. One reason for the earlier development of these skills may be that they are more readily acquired through modeling of adult behaviors, as many of these coping strategies involve overt behavior and are observable even by young children. In contrast, emotion-focused coping skills appear to develop in later childhood and early adolescence. They may emerge later for several reasons, including: (a) younger children may have less access to or awareness of their own internal emotional states, (b) younger children may fail to recognize that their emotions can be brought under self-regulation, and (c) the emotion-focused coping efforts of others are less observable and therefore less easily learned through modeling processes.

In summary, a basic distinction is usually made between problem-focused and emotion-focused coping strategies. Emotion-focused coping appears to increase during childhood, but no childhood developmental changes are usually found in problem-focused coping. This difference may occur because the skills necessary for problem-focused coping are acquired at an earlier age than those needed for emotional regulation.

Perceived Control and Coping

Both control-related beliefs and coping processes are central factors in understanding the ways in which individuals adapt to both acute stressful events and chronic stressful conditions in their lives. The association between percep-

tions of control and coping processes has received considerable attention in cognitive models of stress and coping, as well as in various models of perceived control. Folkman (1984) outlined a complex set of relations among control beliefs, appraisals of threat and challenge, and the use of problem- and emotion-focused coping. Among these principles is the notion that problem-focused efforts are more adaptive when they are directed toward aspects of the person–environment relationship that are perceived as changeable, while emotion-focused efforts are more adaptive when a situation is recognized as uncontrollable. Similarly, Weisz (1986b) suggested that a key developmental task involves learning to distinguish between situations where persistence (which can be seen as similar to the continued use of problem-focused coping efforts) pays off vs. situations where it does not, and that perceptions of control play the central role in this judgment process. Also, the effects of emotion-focused coping strategies such as acceptance may depend on whether or not they are associated with a sense of loss of control or with exercising secondary control (Weisz, 1986b).

Although there is some evidence that both problem- and emotion-focused coping are tied to perceptions of control (e.g., Folkman & Lazarus, 1980), these two types of coping may be matched to separate sets of cues. Problem-focused coping efforts may be related to individuals' feelings of perceived control over a stressful situation, whereas emotion-focused coping efforts may be linked to internal cues of emotional distress. For example, Forsythe and Compas (1987) found this pattern in college students' use of coping methods. This pattern reflects the different functions served by problem- and emotion-focused coping as outlined by Lazarus and Folkman (1984). Specifically, Folkman (1984) proposed that emotion-focused efforts should increase as threat appraisals and associated emotions increase because, as these emotions increase, more coping efforts have to be directed toward their regulation. In contrast, problem-focused coping efforts are directed toward those aspects of the environment that are perceived as controllable or changeable. Although the relations between problem-focused coping and perceived control and between emotion-focused coping and emotional distress are most likely reciprocal in nature, longitudinal data to test this possibility have not been reported.

The few studies that have examined the relation between control and coping in children and adolescents indicate that the association between control beliefs and problem-focused coping may emerge fairly early in development (even by age 6). In studies of coping with interpersonal stress such as conflicts or problems with peers, problem-focused coping has been found to be positively correlated with perceived control, while emotion-focused coping was unrelated to control beliefs in school-aged children (Compas, Banez, et al., 1991) and also in young adolescents (Compas et al., 1988). Similar findings were also noted in a study of coping with more serious problems: An investigation of 128 children, adolescents, and young adults coping with the diagnosis of cancer in their mother
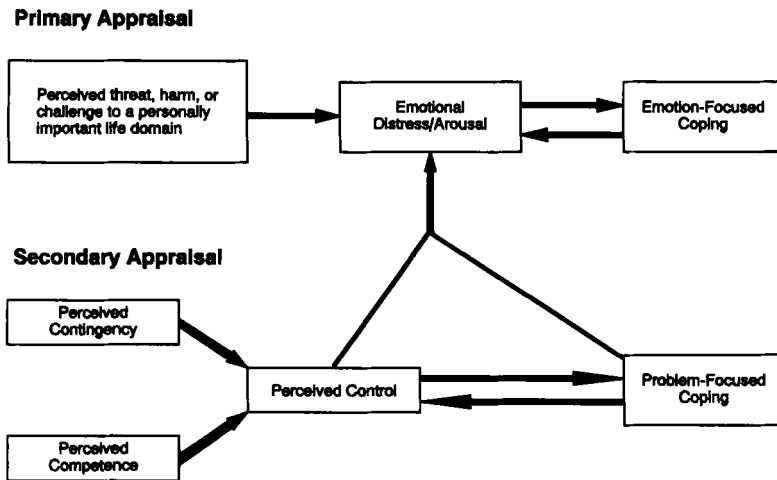
Primary Appraisal

Fig. 1. Model of control-related beliefs, coping, and emotional distress.

or father found that reports of problem-focused coping were related to a greater sense of personal control over the parents' illness and recovery (Compas & Worsham, 1991). In all three studies, reports of emotion-focused coping, although unrelated to control beliefs, were related to higher levels of emotional distress.

These recent studies of children's and adolescents' control-related beliefs and coping suggest the importance of both cognitive and emotional processes in the development of coping. Drawing on these studies and the broader literature on children's control-related beliefs, a conceptualization of contingency, competence, and control beliefs, and their relation to emotions and coping is presented in Fig. 1. First, contingency and competence beliefs contribute directly to perceptions of personal control in stressful situations (Weisz, 1986b). Control beliefs and problem-focused coping are related positively and reciprocally; a high sense of personal control will lead to greater use of problem-focused coping and problem-focused coping efforts may enhance feelings of control if they are effective in changing the environment. Emotion-focused coping efforts are unrelated to control beliefs, but instead are used to a greater or lesser degree in response to levels of emotional distress or arousal. Further, there is evidence that emotional distress/arousal is related to the interaction of control beliefs and problem-focused coping. Emotional distress has been found to be lower when problem-focused coping is used and perceived control is high (a good match between control and coping). Elevated levels of emotional distress have been found when problem-focused coping efforts are used and perceived control is low (a poor match between control and coping). This pattern of relationships has been

observed in studies with young adolescents (Compas et al., 1988), college students (Forsythe & Compas, 1987), and in a sample ranging in age from childhood to young adulthood (Compas & Worsham, 1991).

Directions for Future Research and Intervention

Several issues in this research require further investigation. First, more fine-grained analyses are needed of the development of subtypes of problem- and emotion-focused coping. For example, it is plausible that emotion-focused coping efforts, intended to reappraise the meaning of an event or to distract oneself from its threatening aspects, may show different patterns of development and may relate to control-related beliefs in different ways than would coping through emotional release. Second, although more comprehensive assessments of control-related beliefs distinguishing between contingency, competence, and control beliefs have been examined, future research needs to clarify further the question of "control over what?" (cf. Folkman, 1984). For instance, children are typically asked about their beliefs regarding the controllability of the outcomes of stressful events, but beliefs about the controllability of the cause and progression of a stressful episode may also be crucial in understanding the coping process. Third, two types of longitudinal data are needed—to study individual patterns of the development of control and coping from childhood into adolescence, and to study coping with a specified stressful event as it unfolds (cf. Folkman & Lazarus, 1985). The latter type of data would be necessary for examining the possibility of reciprocal relationships between coping, control-related beliefs, and emotions. Fourth, direct comparisons of control and coping in objectively uncontrollable—as opposed to controllable—events are needed to determine how these processes may develop differently in these two types of contexts (cf. Weisz, Yeates, Robertson, & Beckman, 1982).

Even at this rather early stage in this research, the study of control-related beliefs and coping also has important implications for interventions designed to teach and enhance coping skills in children and adolescents. Three general approaches have been used in such interventions (see Compas, Phares, & Ledoux, 1989, for a review). The first has been to teach children the necessary skills to manage discrete stressors; for example, facilitating children's coping with medical- and dental-related stress, including coping with aspects of disease and treatment (see Melamed, Klingman, & Siegel, 1984, for a review of these programs). A second approach has concerned coping with specific major life events or crises, primarily parental divorce (e.g., Alpert-Gillis, Pedro-Carroll, & Cowen, 1989; Pedro-Carroll & Cowen, 1985). A third approach has involved teaching coping skills to address a wide range of common everyday stressors, with programs delivered to whole populations of school children (e.g., Compas, Ledoux et al., 1991).

These various approaches have emphasized the training of somewhat differ-

ent types of coping skills. Interventions for children with chronic illnesses and/or undergoing stressful medical procedures have typically emphasized the development of emotion-focused coping skills, including relaxation training and cognitive distraction—based in part on the assumption that many medically related stressors are to a great extent uncontrollable. School-based primary prevention programs for dealing with life stress, and related programs designed to build problem-solving skills for dealing with interpersonal problems and stress, have emphasized the development of active cognitive and behavioral problem-solving skills. Neither of these interventions have addressed individual differences in children's perceptions of the controllability of stress, nor the match between these appraisals of control and coping. Only the Children of Divorce Intervention Program (Alpert-Gillis et al., 1989; Pedro-Carroll & Cowen, 1985) has explicitly addressed the distinction between controllable and uncontrollable divorce-related stress and the use of different types of coping as a function of such an appraisal.

Future development of coping skills intervention programs could take several forms. First, programs could be strengthened by focusing on increasing children's awareness of whether or not control over stressful experiences in their lives is possible, and the need to adapt their use of problem-focused coping in a way that matches these appraisals. Whether these skills of matching coping skills and control-related beliefs can be taught to young children remains to be seen. Second, programs that have previously emphasized training in problem-focused coping skills could be strengthened by teaching children to increase their awareness of their own emotional distress and the need to take steps to manage this distress as a part of the coping process. Finally, greater attention needs to be given to naturally occurring developmental changes in contingency, competence, and control beliefs and coping. Children may be able, as a function of both cognitive and social development, to acquire complex problem-solving skills earlier in life than they can learn sophisticated ways to manage emotional distress. Whether the development of problem- and emotion-focused coping can be accelerated in children deserves attention in future research.

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