



2 Perceived Control and the Development 3 of Coping

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5

Abstract

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Perceived control is a powerful resource when dealing with stressful life events. Research on perceived control (in all its guises, including locus of control, self-efficacy, causal attributions, confidence, and perceived competence) documents its role in supporting constructive mastery-oriented coping at all points in the lifespan. Likewise, research at every age reveals the vulnerabilities induced by a sense of helplessness and loss of control, and documents their effects in undermining how people deal with difficulties and failures. This chapter uses work on the development of perceived control to help guide the developmental study of coping, examining (1) how mastery-oriented and helpless ways of coping may change in their form across infancy, childhood, adolescence, adulthood, and old age; (2) how the development of perceived control may contribute to qualitative shifts in how coping is organized as people age; and (3) how coping itself may constitute a proximal process that shapes the development of perceived control. Throughout the chapter, a multi-level systems view on the development of coping is highlighted, with a strong emphasis on the role of social partners, relationships, and contexts in shaping both coping and perceived control.

Keywords: perceived control, self-efficacy, coping, aging, social factors

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The controllability of stress appears to be information that may be processed at an automatic and a conscious level and serves to shape and organize the ways that individuals mobilize their responses. However, changes in the nature of perceptions of control and the ways in which the objective and perceived controllability shape coping responses across development is not known and is an important agenda for future research.
(Compas, 2009, p. 96)

Fifty years of research have documented the crucial role played by control, both objective and subjective, when people are faced with challenges and difficulties (Bandura, 1997; Dweck, 1999; Folkman,

1984; Lefcourt, 1992; Peterson, Maier, & Seligman, 1993; Seligman, 1975; Skinner, 1995; Taylor & Stanton, 2007; Weiner, 1986). For example, degree of objective controllability is considered a defining characteristic of negative life events, with loss of control one of the few events that researchers acknowledge as universally stressful (Miller, 1979; Thompson, 1981). Even more extensively studied, however, is *perceived* or subjective control, one of the most powerful personal resources that can be called upon in dealing with obstacles or failures (Folkman, 1984; Taylor, 2007). Its salutary effects have been demonstrated across domains and age groups from earliest infancy (Watson, 1966) to oldest age



(Baltes & Baltes, 1986). Multiple programs of research have traced the many pathways by which a sense of control influences reactions to stress, including through physiology, behavior, emotions, energy, attention, motivation, volition, and cognition.

The vast majority of research has focused on individual differences, examining how people who experience differing levels of objective or perceived control behave differently during stressful encounters. This focus meshes well with the majority of research on coping, which also examines individual differences: how people who possess different levels of personal and social resources (e.g., perceived control or social support) show different kinds of coping, and how different kinds of coping contribute to aspects of individual physical, psychological, and social functioning (Aldwin, 2007; Compas et al., 2001; Folkman & Moskowitz, 2004). Many fewer studies have considered the development of either control or coping, at least partly because the work on individual differences seems so unequivocal: The benefits of perceived control when dealing with stress are found at all ages.

However, at a general level, researchers also agree that every aspect of how individuals detect and respond to stress is shaped by their developmental level (Aldwin, 2007; Compas, 1998; Garmezy & Rutter, 1983; Murphy & Moriarty, 1976; Skinner & Zimmer-Gembeck, 2007). For example, infants, children, adolescents, adults, and the elderly differ in the kinds of encounters they experience as stressful, in the nature of their appraisals, in their repertoires of potential coping responses, and in the role played by social partners. All these processes should show age-graded shifts, at least up until early adulthood, and potentially across the lifespan (Aldwin, 2007). At the same time, however, researchers have noted the difficulty of realizing a developmental agenda for the study of coping (Compas, 1998, 2009; Coping Consortium, 1998, 2001; Fields & Prinz, 1997; Skinner & Edge, 1998; Skinner & Zimmer-Gembeck, 2007, 2009), precisely because coping reflects a higher-order construct, integrating work on a variety of processes involved in detecting and responding to challenges, threats, and losses.

The goal of this chapter is to use research on the development of perceived control to serve as a scaffold for work on the development of coping. Although most studies of control, like most studies of coping, have focused on individual differences, pockets of research have examined age-graded shifts in many of the processes used for perceiving and interpreting control experiences (e.g., Flammer,

1995; Gurin & Brim, 1984; Heckhausen, 1982, 1984; Skinner & Connell, 1986; Skinner, Zimmer-Gembeck, & Connell, 1998; Wang & Pomerantz, 2009; Weisz, 1980, 1986; Wigfield et al., 2006; Wigfield & Eccles, 2002). Taken together, they suggest fundamental and systematic shifts at many ages, for example, in the kinds of information used to infer control, in the strategies used to exert control, in the understanding of the causes of control (e.g., effort, task difficulty, luck, ability), and even in the nature of the self to which control is attributed (Flammer, 1995; Skinner, 1995; Weisz, 1986). Hence, a careful consideration of developmental shifts in control, which is a reliably robust contributor to coping, might help map out some key developmental landmarks in coping processes.

This chapter is organized in four sections. After providing an overview of current multi-level systems conceptualizations of coping and a brief summary of the nature and terminology of control, we use the research on the development of control to explore three issues: (1) how mastery-oriented and helpless ways of coping may change in their form across infancy, childhood, adolescence, adulthood, and old age; (2) how the development of perceived control may contribute to qualitative shifts in how coping is organized as people age; and (3) how coping itself may constitute a proximal process that shapes the development of perceived control. Running throughout the chapter is a strong emphasis on the role of social partners, relationships, and contexts in shaping both coping and perceived control.

Multi-level Systems Views of Coping

At the core of the study of coping are the ways that people actually react to and deal with real stressors in their daily lives. As a result, the building blocks of the area are “ways of coping,” including constructive responses, such as problem-solving, effort exertion, help-seeking, distraction, or accommodation, as well as maladaptive responses, such as helplessness, escape, opposition, social isolation, or rumination. A focus on actual stressful interactions means that the study of coping has the potential to add value to work on risk and resilience by investigating how overarching risk factors may (or may not) produce daily encounters with stress, and how individuals’ everyday dealings with stress may (or may not) contribute cumulatively to lasting resources and vulnerabilities (Coping Consortium, 1998, 2001). Moreover, because coping entails a repertoire of responses, its study has the potential to integrate research across a range of individual responses to

1 stress, such as help-seeking or rumination, which
 2 typically have been studied in relative isolation from
 3 each other (Coping Consortium, 1998, 2001).

4 Although ways of coping are a defining feature of
 5 research in the area, systems conceptualizations
 6 point out that these ways, even though expressed by
 7 individuals, are actually a function of the entire
 8 transactional “coping system” in which the individ-
 9 ual is embedded. A schematic of the coping system
 10 can be seen in the middle portion of Figure 3.1.
 11 This system includes many interacting components,
 12 such as the nature of the stressor itself (e.g., its actual
 13 severity and controllability), the context in which
 14 the encounter takes place, the appraisal of what is at
 15 stake, and the personal and social resources available
 16 to the individual when dealing with the event
 17 (Lazarus & Folkman, 1984). In addition, coping
 18 episodes unfold over time, so previous encounters
 19 and ongoing iterations influence how people deal
 20 with both novel and recurrent stressors (Folkman &
 21 Lazarus, 1985).

22 At the same time, as also depicted in Figure 3.1,
 23 coping can be considered part of a multi-level
 24 process that extends from conditions of risk and
 25 resilience at the highest level to individual moment-
 26 to-moment transactions with stressors at the lowest
 27 level (Coping Consortium, 1998, 2001). As shown
 28 in the top portion of Figure 3.1, coping can be
 29 viewed as an adaptive process that potentially medi-
 30 ates the effects of risk or adversity on the develop-
 31 ment of competence. So within the larger frame of
 32 work on risk and resilience, coping can be consid-
 33 ered a “proximal process” or driver of development
 34 under conditions of adversity (Bronfenbrenner &
 35 Morris, 1998). At the same time, as shown in the
 36 bottom portion of Figure 3.1, coping episodes can
 37 be decomposed into individual stressful encounters
 38 that take place in real time and are shaped by the
 39 actions of particular social partners as well as by the
 40 subsystems that give rise to specific individual reac-
 41 tions, such as physiology, emotion, attention, cog-
 42 nition, motivation, and behavior. At this level,
 43 coping overlaps with work on regulation, especially
 44 the study of regulation under stressful conditions
 45 (Compas, 2009; Eisenberg, Fabes, & Guthrie,
 46 1997; Eisenberg, Valiente, & Sulik, 2009; Skinner
 47 & Zimmer-Gembeck, 2009).

48 Such a multi-level view has been used by theo-
 49 rists to describe the place and purpose of research on
 50 coping with respect to work on resilience (which
 51 takes place at a higher level) and work on regulation
 52 (which takes place at a lower level) (Skinner, 1999).
 53 Researchers point out the requirements that such a

task places on conceptualizations of coping, but also
 highlight the potential of coping to contribute to
 the integration of a range of theories, methodologi-
 es, and findings relevant to understanding how
 individual development is shaped by stress and
 adversity, work that currently inhabits a variety of
 niches distributed across all of psychology (Coping
 Consortium, 1998, 2001).

Nature of Control and Control Constructs

In attempting to use research on the development
 of control to inform work on coping, it is important
 to be clear about the nature and functioning of
 control. Because the area of control is so fertile, it
 has supported research on a variety of constructs,
 including locus of control (Lefcourt, 1992; Rotter,
 1966; Strickland, 1989), expectancies of success
 (Wigfield & Eccles, 2000), causal attributions
 (Weiner, 2005), learned helplessness (Seligman,
 1975), self-efficacy (Bandura, 1997), mastery (Dweck,
 1999), and perceived competence (Harter, 2006).
 (See Heckhausen, 1991; Stipek, 2002; or Wigfield
 et al., 2006, for more details.) On the one hand, the
 simultaneous investigation of these overlapping
 processes has produced a mature understanding of
 the antecedents, consequences, and mechanisms of
 control across multiple domains and age groups.
 On the other hand, the profusion of constructs has
 made it difficult to judge the validity of competing
 claims or even to discern the boundaries of the field
 of control itself (Skinner, 1996).

The nature of control

Although consensus is not complete, a generally
 accepted assumption in the area is that the power of
 control to organize human behavior is based on the
 fact that all people (and many other species) come with
 a fundamental psychological need to be effective in
 their interactions with the environment (Connell &
 Wellborn, 1990; Deci & Ryan, 1985; Elliot & Dweck,
 2005; Elliot, McGregor, & Thrash, 2002; Harter,
 1978; Koestner & McClelland, 1990; Skinner, 1985).
 Referred to as the need for effectance, competence, or
 control, this idea was first articulated in the psycho-
 logical literature in 1959 by Robert White, who
 assembled a wide range of observations and research
 suggesting humans possess an intrinsic desire to create
 effects in the environment, apparent, for example, in
 infants’ delight in making things rattle and fall. White’s
 insight—that this motive offers an adaptive edge
 because people are naturally motivated to discover
 how the world works and how their actions can be
 effective—has proven durable. Successive generations

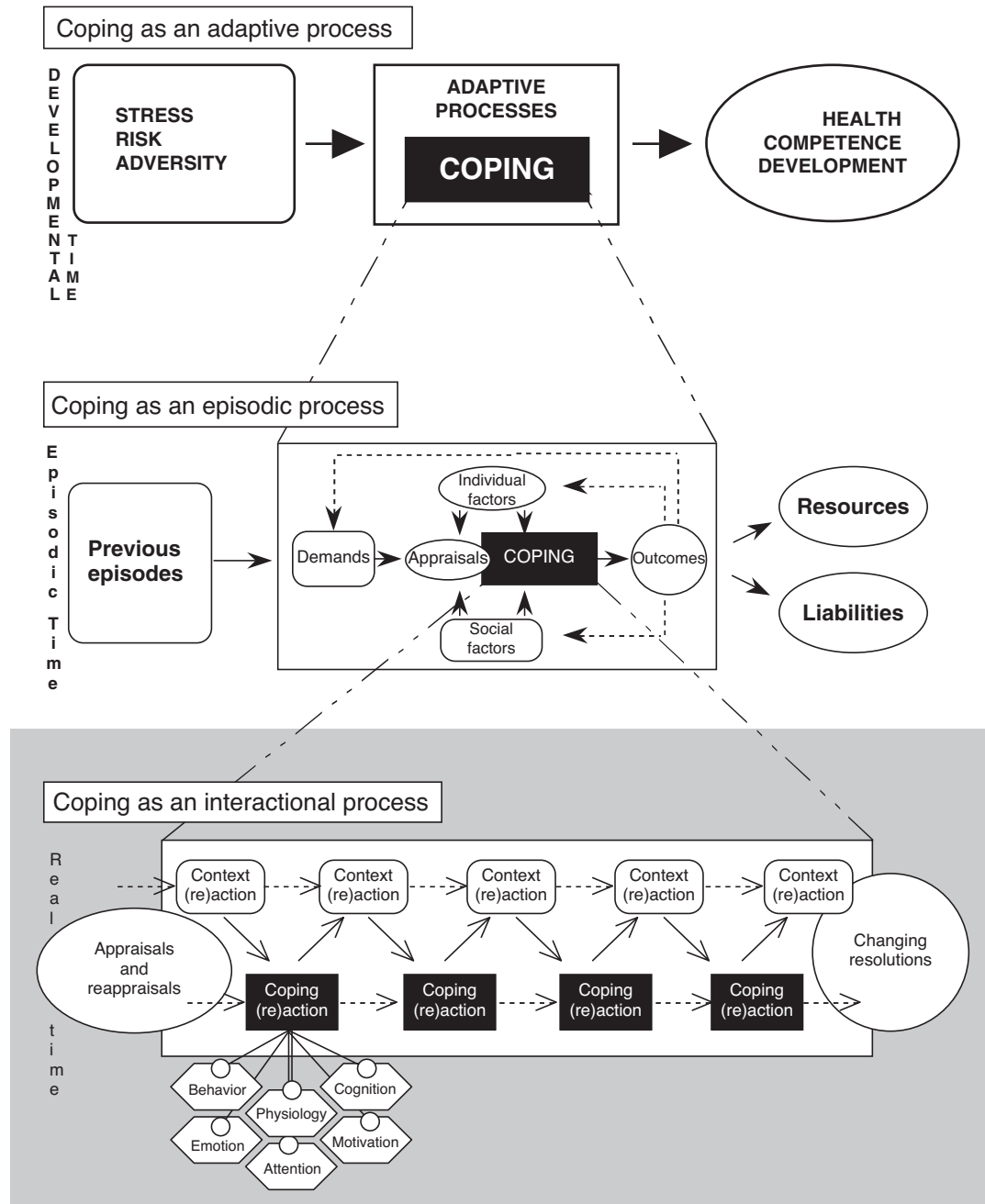


Figure 3.1 A model of coping as a multi-level adaptive system operating (top) as an adaptive process across developmental time, (middle) as an episodic process across episodic time, and (bottom) as an interlational process across real time. (Reprinted, with permission, from the *Annual Review of Psychology*, Vol. 58, 2007.)

1 of researchers have shown how species-wide human
 2 neurophysiology supports this motivation, providing
 3 energy and effort focused on producing desired and
 4 preventing undesired outcomes, and leading to joy
 5 upon creating effects and dejection at non-contingency
 6 and loss of control (e.g., Amat et al., 2007; Gunnar &
 7 Quevado, 2007; Watson & Ramey, 1972).

Terminology of control

8 Hence, at the core of control is the experience of
 9 exerting effort that produces a desired outcome
 10 (Skinner, 1996). Also referred to as *generative trans-*
 11 *mission* or *personal force*, these *experiences of control*
 12 or *mastery* can be distinguished from objective and
 13 subjective control. *Objective control conditions* refer
 14

1 to the actual controllability of outcomes, usually
 2 depicted by the objective contingencies in the envi-
 3 ronment (the conditional probability of an outcome
 4 given action compared to the probability of an
 5 outcome given no action) and the actual competen-
 6 cies of the actor (Seligman, 1977). Careful experi-
 7 mental studies of objective non-contingency have
 8 been able to uncover the neurological and hormonal
 9 pathways by which it shapes stress responses, and
 10 have shown that its deleterious effects can be found
 11 across a range of mammalian species (Maier &
 12 Watkins, 2005).

13 *Subjective control* refers to perceived control or
 14 the actor's estimations of the control available to
 15 him or her. Most theories in the area are focused on
 16 perceived control, and so their names refer to facets
 17 of subjective control: an overall sense of control
 18 (e.g., expectancies of success, control beliefs), beliefs
 19 about available contingencies (e.g., locus of control,
 20 causal attributions, learned helplessness, strategy
 21 beliefs), or beliefs about one's access to effective
 22 means (e.g., self-efficacy, perceived competence,
 23 perceived ability, capacity beliefs). In discussions of
 24 whether more control is better, these different kinds
 25 of control are often confused. Mastery experiences
 26 have consistently been found to result in a range of
 27 physiological and psychological benefits. However,
 28 although objective control and subjective control
 29 usually produce positive effects, they do not always.
 30 For example, sometimes the availability of control
 31 can prove to be coercive—pressuring people to exert
 32 effort or to engage with stressors when they might
 33 prefer not to.

34 **Individual Differences in Control** 35 **and Coping**

36 All three kinds of control, that is, objective, subjec-
 37 tive, and experiences of control—shape coping
 38 (Folkman, 1984). *Objective* controllability is a defin-
 39 ing feature of the stressors to which individuals are
 40 exposed (Seligman, 1975). When examining coping,
 41 researchers are usually careful to distinguish situa-
 42 tions that are objectively uncontrollable from those
 43 that are open to influence (Compas et al., 1991).
 44 Controllability matters, whether the event is rela-
 45 tively trivial and short-lived (e.g., going to the den-
 46 tist or giving a report in front of the class) or more
 47 chronic and potentially life-changing (e.g., parents'
 48 divorce or life-threatening illness). In fact, a key dif-
 49 ference between stressors appraised as challenge,
 50 threat, or loss is the degree of controllability, with
 51 loss events by definition offering no possibility of
 52 reversing the outcome (Lazarus & Folkman, 1984).

Subjective control describes an important per- 53
 54 sonal resource individuals draw upon in forming
 appraisals and planning actions (Dweck, 1999; 55
 Folkman, 1984). It is the conduit by which objec- 56
 tive control conditions shape coping (Abramson, 57
 Seligman, & Teasdale, 1978). In contrast to objec- 58
 tive and subjective control, *experiences* of control 59
 describe the coping process itself: Mastery refers to 60
 coping episodes in which problem-solving efforts 61
 are deployed, and in which, over time, desired out- 62
 comes are produced and undesired ones are pre- 63
 vented or terminated. In the same vein, helplessness 64
 describes coping experiences in which attempts to 65
 influence the outcome do not produce their desired 66
 effects. 67

Control and the dynamics of coping 68

The effects of control are apparent at every point in 69
 the coping process (Dweck, 1999; Folkman, 1984; 70
 Skinner, 1995; Wigfield et al., 2006). When events 71
 are objectively controllable or when individuals 72
 have high confidence and efficacy, they are more 73
 likely to expect to be effective in stressful situations 74
 and so to appraise negative events as challenges 75
 rather than threats. They approach tasks with 76
 concentration and vigor, break them into manage- 77
 able sequential parts, and employ a variety of alter- 78
 native strategies. They look for action opportunities 79
 as events unfold, and remain focused on problem 80
 solutions. They maintain access to their cognitive 81
 resources and so perform close to the ceiling of their 82
 capacity. They show flexible and creative problem- 83
 solving, and seek help when needed. Regulation is 84
 constructive—that is, focused on generating strate- 85
 gies and shaping actions to be effective. They collect 86
 information about potential contingencies, viewing 87
 even failed attempts as instructive. They show more 88
 planning and proactive coping, taking preemptive 89
 actions. This pattern of coping is likely to be suc- 90
 cessful in actually dealing with stressful situations, 91
 and even when problems are not immediately solv- 92
 able, produces gains in knowledge and skills. Over 93
 time, these coping episodes augment actual compe- 94
 tence and may even reduce the likelihood of sub- 95
 sequent encounters with stressful events, both of 96
 which in the long run bolster a sense of control 97
 (e.g., Schmitz & Skinner, 1993). 98

Processes of helplessness have also been studied 99
 in detail (Dweck, 1999; Peterson et al., 1993). 100
 People who are exposed to uncontrollable events, 101
 who feel incompetent, or who believe that events are 102
 contingent on unknown or uncontrollable causes 103
 (like powerful others, chance, luck, or fate) seem to 104

1 be debilitated by obstacles or failures. They are more
 2 upset and show greater involuntary stress reactions.
 3 They appraise events as more threatening and tend
 4 to procrastinate or give up quickly. They lose focus
 5 and concentration, becoming distracted by self-
 6 doubt, rumination about failure, and worries about
 7 lack of ability. These preoccupations rob them of
 8 their previous skills at hypothesis-testing and strat-
 9 egizing (Dweck, 1999), resulting in more rigid
 10 problem-solving, passivity, confusion, escape, or
 11 help avoidance. This pattern of coping is not effec-
 12 tive in dealing with stressors or learning from mis-
 13 takes, and interferes with the development of actual
 14 skills and competencies, even making future stres-
 15 sors more likely (Downey, Freitas, Michaelis, &
 16 Khouri, 1998). In the long run, such experiences
 17 cement pessimism and expectations of future help-
 18 lessness (e.g., Nolen-Hoeksema, Girgus, & Seligman,
 19 1986).

20 As can be seen, these dynamics are amplifying.
 21 Individuals who are initially high on perceived con-
 22 trol, through the ways they engage with problems,
 23 become even more competent and efficacious,
 24 whereas individuals who initially doubt their capac-
 25 ity to influence events, through their ineffectual
 26 handling of challenges, become even less competent
 27 and more helpless. Such cycles, if they iterate over
 28 time, can magnify initial individual differences,
 29 making the rich richer and the poor even poorer,
 30 and transforming subjective control to objective
 31 control. Taken together with information about
 32 objective control conditions (actual stressors and
 33 difficulties) and social supports, these dynamics can
 34 provide one account of the development of indi-
 35 vidual differences in perceived control, competence,
 36 and patterns of coping with stress (Seligman, 1975;
 37 Skinner et al., 1998).

38 **Developmental Conceptualizations** 39 **of Coping**

40 It has proven surprisingly difficult to move beyond
 41 research on individual differences in coping in order
 42 to focus on the study of its development. A develop-
 43 mental agenda calls for research that identifies age-
 44 graded shifts in how infants, children, youth, adults,
 45 and the elderly detect, appraise, and respond to
 46 actual stressful events in their everyday lives, and
 47 would depict the underlying developments respon-
 48 sible for these changes (Compas, 1998, 2009;
 49 Murphy & Moriarity, 1976; Skinner & Edge, 1998;
 50 Skinner & Zimmer-Gembeck, 2007). In making
 51 progress on this agenda, researchers have had to
 52 construct “developmentally friendly” conceptualiza-

53 tions that link coping to basic adaptive processes. 53
 54 An important step in this regard has been consensus 54
 55 that coping can be considered “regulation under 55
 56 stress” (Compas et al., 2001; Eisenberg et al., 1997, 56
 57 2009; Skinner & Zimmer-Gembeck, 2007). From 57
 58 this perspective, coping refers to how people mobi- 58
 59 lize, coordinate, manage, and direct their actions 59
 60 (including behavior, emotion, attention, cognition, 60
 61 and physiology) under conditions of challenge, 61
 62 threat, or loss. This definition establishes links 62
 63 between coping and the normative development of 63
 64 emotional, attentional, and behavioral regulation as 64
 65 well as the underlying constitutional and social fac- 65
 66 tors that shape their development. 66

67 A second important step has been the use of 67
 68 overarching families to help organize the seemingly 68
 69 endless lists of ways of coping that have been stud- 69
 70 ied to date (Skinner, Edge, Altman, & Sherwood, 70
 71 2003). It has proven impossible to integrate studies 71
 72 of coping across (or even within) age groups because 72
 73 assessments utilize a wide variety of disparate and 73
 74 partially overlapping categories of coping (Compas 74
 75 et al., 2001; Zimmer-Gembeck & Skinner, 2009). 75
 76 Analyses of their multiple functions allow ways of 76
 77 coping to be classified into about a dozen families 77
 78 that serve three major adaptive functions (Table 3.1). 78
 79 The major adaptive function of the ways of coping 79
 80 organized around control is to find actions that 80
 81 are effective in operating contingencies in the envi- 81
 82 ronment. The four families that serve this function 82
 83 are: (1) *problem-solving*, which allows people to gen- 83
 84 erate and adjust their actions so that they are effec- 84
 85 tive; (2) *information-seeking*, which allows people 85
 86 to discover new contingencies in the environment; 86
 87 (3) *helplessness*, which identifies the limits of effective 87
 88 action; and (4) *escape*, which is an extreme form of 88
 89 avoidance that allows people to leave, distance them- 89
 90 selves from, or deny non-contingent environments. 90

91 Each of these families contains many ways of 91
 92 coping in addition to the one used as its label. For 92
 93 example, “problem-solving” includes all ways of 93
 94 coping that serve the function of adjusting actions 94
 95 to be more effective, such as effort exertion, persis- 95
 96 tence, instrumental action, strategizing, planning, 96
 97 active attempts, and so on. Likewise, “information- 97
 98 seeking” includes many ways of collecting knowl- 98
 99 edge about how to produce desired and prevent 99
 100 undesired events, including asking others, looking 100
 101 up information in reference sources, direct observa- 101
 102 tion of others’ performances, reading, experimenta- 102
 103 tion, and so on. These four families of coping have 103
 104 been the subject of intense scrutiny: Within research 104
 105 on coping, they are some of the most common ways 105

Table 3.1 A hierarchical model of adaptive processes and families of coping

Adaptive Process #1: Coordinate Actions and Contingencies in the Environment			
Family of Coping	1. Problem-solving	2. Information-Seeking	3. Helplessness
Family Function in Adaptive Process	Adjust actions to be effective	Find additional contingencies	Find limits of actions
Ways of Coping	Strategizing Instrumental action Planning Mastery	Reading Observation Asking others	Confusion Cognitive interference Cognitive exhaustion Passivity
			4. Escape Escape non-contingent environments Behavioral avoidance Mental withdrawal Flight Denial Wishful thinking
Adaptive Process #2: Coordinate Reliance and Social Resources Available			
Family of Coping	5. Self-reliance	6. Support-Seeking	7. Delegation
Family Function in Adaptive Process	Protect available social resources	Use available social resources	Find limits of resources
Ways of Coping	Emotion regulation Behavior regulation Emotional expression Emotion approach	Contact-seeking Comfort-seeking Instrumental aid Social referencing	Maladaptive help-seeking Complaining Whining Self-pity
			8. Social Isolation Withdraw from unsupportive contexts Social withdrawal Concealment Avoiding others Freeze
Adaptive Process #3: Coordinate Preferences and Available Options			
Family of Coping	9. Accommodation	10. Negotiation	11. Submission
Family Function in Adaptive Process	Flexibly adjust preferences to options	Find new options	Give up preferences
Ways of Coping	Distraction Cognitive restructuring Minimization Acceptance	Bargaining Persuasion Priority-setting	Rumination Rigid perseveration Intrusive thoughts
			12. Opposition Remove constraints Other-blame Projection Aggression Defiance

1 studied and some of the most common reactions to
2 stress (Skinner et al., 2003). Within the area of con-
3 trol, they are the operational definitions of mastery
4 and helplessness. These families represent complete
5 overlap between the areas of coping and control and
6 so are the primary ways of coping considered in this
7 chapter.

8 **Perceived Control and the Development** 9 **of Ways of Coping**

10 The first way that research on perceived control may
11 be able to contribute to developmental studies of
12 coping is to reveal how mastery-oriented and helpless
13 ways of coping change in their form across infancy,
14 childhood, adolescence, adulthood, and old age. The
15 analysis of overarching functions of coping families
16 marks the beginning of such a catalog. Functions can
17 be used to identify corresponding lower-order ways
18 of coping that, despite their apparent topological
19 differences, are developmentally graded members of
20 the same family. Functional analyses have been used
21 in work on emotion and attachment to show that a
22 variety of forms of action (such as crying, calling,
23 and crawling to a caregiver) fall within the same cate-
24 gory because they serve the same function (in this
25 case, proximity-seeking) (Cassidy, 1994; Cassidy &
26 Shaver, 1999). The identification of functionally
27 analogous categories allows a phenomenon to be fol-
28 lowed across developmental periods even if it changes
29 its form. A consideration of the action outcomes of
30 perceived control at successive ages may be helpful
31 in identifying functionally analogous ways of cop-
32 ing for the families of problem-solving, information-
33 seeking, helplessness, and escape.

34 *Perceived control and coping* 35 *during infancy*

36 Newborns react to stressors based on their species'
37 general stress physiology and their temperamental
38 characteristics (Derryberry et al., 2003; Gunnar &
39 Quevado, 2007). Generally, infants come with the
40 capacity to detect action-outcome contingencies
41 and to respond to them with interest and energy
42 (Papousek & Papousek, 1979; Watson, 1966). At
43 the same time, there also seem to be inborn indi-
44 vidual differences in sensitivity to contingencies,
45 interest in creating effects, focus of attention, and
46 intensity of emotional responsiveness to contingent
47 stimulation. Studied individually as dimensions of
48 temperament or collectively as mastery motivation
49 (Morgan & Harmon, 1984), such differences have
50 been documented in the first months of life (Rueda
51 & Rothbart, 2009).

Critical to understanding perceived control in
52 infancy is the recognition that the earliest experi-
53 ences of control are created by caregivers when they
54 show sensitive responsiveness to infants' signals
55 (Davidov & Grusec, 2006; Lamb & Easterbrooks,
56 1981; Landry, Smith, & Swank, 2006; Papousek
57 & Papousek, 1980). Social partners can provide
58 contingency long before infants have the motor
59 coordination to create effects in the physical world.
60 Control experiences (and early coping) for infants
61 consist of sending out distress signals, and gaining
62 confidence that caregivers will soon respond with
63 appropriate comforting actions. The same experi-
64 ences that promote a sense of control also promote a
65 secure attachment, and such attachments have been
66 shown to buffer stress and shape the development
67 of stress reactions, including physiological ones,
68 starting at birth (Nachmias, Gunnar, Mangelsdorf,
69 Parritz, & Buss, 1996).
70

The earliest forms of stress reactions are based
71 on reflexes and temperament, but they are soon
72 supplemented by action schemes, such as directing
73 bids or shaping the distress signals sent to caregivers
74 (Barrett & Campos, 1991; Kopp, 1989). If care-
75 giver reactions are not forthcoming, efforts are nor-
76 mally intensified (Goldstein, Bornstein, & Schwade,
77 2009). In terms of creating contingencies in the
78 physical world, early object play involves repetition
79 and "practice" creating desired effects, such as shak-
80 ing rattles or hitting dangling toys (Piaget, 1976).
81 Early forms of information-seeking may include
82 social referencing, in which infants study their care-
83 givers for signs communicating the severity and
84 emotional significance of novel or stressful events
85 (Diamond & Aspinwall, 2003; Hornik, Risenhoover,
86 & Gunnar, 1987; Lewis & Ramsay, 1999; Sorce
87 et al., 1985). Infants use this information to guide
88 their actions, deciding, for example, whether to
89 continue into a potentially dangerous situation or to
90 scoot back to the caregiver. Other early forms of
91 information-seeking may include object play, in
92 which the various potentials of an object are explored,
93 and "learning by doing," in which infants succes-
94 sively try out multiple variants on an action, such as
95 banging a spoon with varying amounts of force
96 (Piaget, 1976).
97

The earliest forms of helplessness usually involve
98 passivity in the face of objectively controllable
99 events, and may also involve protest and other forms
100 of emotional distress (Watson & Ramey, 1972).
101 When infants are passive, they create fewer action-
102 event contingencies. Moreover, learned helplessness
103 implies that they also pay less attention to effects
104

1 that are created, and so are less sensitive to detect-
 2 ing existing contingencies. In terms of escape, its
 3 prototypical expression involves leaving the stress-
 4 ful situation, and so is most obvious after an
 5 infant can locomote. Nevertheless, prior to inde-
 6 pendent locomotion, infants can express the desire
 7 to escape by reaching for the caregiver (Robinson &
 8 Acevedo, 2001) or leaning/looking away from an
 9 event (Gianino & Tronick, 1988). They may also
 10 escape through gaze aversion, head turning, or sleep
 11 (Kopp, 1989; Kopp & Neufeld, 2003; Mangelsdorf,
 12 Shapiro, & Marzolf, 1995).

13 ***Perceived control and coping during***
 14 ***preschool age***

15 Ages 2 to 5 bring a major shift in children's action
 16 potential. For the first time, they become able to
 17 intentionally direct their own behaviors, stopping
 18 themselves from doing things they spontaneously
 19 want to do and making themselves do things they
 20 do not really want to (Kochanska, Coy, & Murray,
 21 2005). This expands their repertoire of effective
 22 actions and allows them to be more self-reliant in
 23 producing desired effects. Temperament continues
 24 to play a role, with children higher in emotional
 25 reactivity less able to regulate and children higher
 26 in effortful control more able to regulate their
 27 behaviors of their own accord (Kochanska, Aksan,
 28 & Carlson, 2005). Information-seeking can also
 29 become more intentional. Preschool-age children
 30 can pose explicit requests to adults and peers, asking
 31 for information about what to do when faced with
 32 obstacles and difficulties (Kerns et al., 2006).

33 Young children still rely on caregivers and adults
 34 in stressful situations, but with enough support they
 35 are often able to carry out effective actions on their
 36 own (Bronson, 2000). At the same time, however, the
 37 severity of the stressful event and the quality of adult
 38 participation determine whether children will be
 39 able to act effectively in a given situation (Kopp,
 40 2009). Joint problem-solving with caring adults likely
 41 represents the kind of coping episodes out of which a
 42 repertoire of adaptive strategies, as well as confidence
 43 and actual competence, emerges (Kopp, 2009).

44 At this age, helplessness and escape take on their
 45 prototypical forms (Burhans & Dweck, 1995).
 46 Compared to mastery-oriented children, young
 47 children with low perceived control show less persis-
 48 tence, focus, and concentration on difficult tasks,
 49 and try out less sophisticated hypothesis-testing
 50 strategies. In terms of escape, they stop working as
 51 soon as possible and select easier future tasks.
 52 Although there was initially some speculation that

53 young children might be less vulnerable to help-
 54 lessness than older children, subsequent research
 55 has demonstrated that preschool-age children, given
 56 appropriate tasks and concrete evidence of failure,
 57 show full-blown helplessness effects, including behav-
 58 ioral, emotional, and self-derogatory components
 59 (e.g., Boggiano et al., 1993).

60 It is important to note that the development of
 61 coping strategies seems to be cumulative (Zimmer-
 62 Gembeck & Skinner, 2009)—that is, there is no
 63 evidence that, as new ways of coping emerge, old
 64 strategies disappear. For example, as young children
 65 become able to intentionally deploy actions and
 66 explicitly request information, they nevertheless
 67 continue to have access to action schema that served
 68 them as infants, such as direct action, effort exer-
 69 tion, expressions of distress, direct observation of
 70 others, and social referencing. In this way, coping
 71 repertoires are expanded and may become more
 72 organized and integrated, although few studies of
 73 coping have empirically examined this possibility
 74 (Zimmer-Gembeck & Skinner, 2009).

75 ***Perceived control and coping during***
 76 ***childhood***

77 A major shift taking place between ages 5 and 7 is
 78 the development of problem-solving that is largely
 79 cognitive in nature (Sameroff & Haith, 1996)—that
 80 is, children are better able to imagine the effects of
 81 different strategies, and then select the one they
 82 think is most likely to be effective, without needing
 83 to actually try them out on the plane of action
 84 (Piaget, 1976). This expands coping possibilities,
 85 saving children a great deal of time and energy, by
 86 bringing strategies forward from previous episodes
 87 and by avoiding potential failures and negative
 88 social reactions. Children are also increasingly
 89 able to use cognitive means of information-seeking,
 90 for example reading, even though social means of
 91 information-seeking are still preferred, including
 92 going to adults for advice and, for specific issues,
 93 turning to peers (Zimmer-Gembeck & Skinner,
 94 2008, 2009).

95 The use of cognition to organize coping responses
 96 opens the way for adaptive strategies, but it can
 97 also play a role in the creation of helplessness.
 98 During middle childhood, children's cognitive
 99 expectancies become important and stubborn driv-
 100 ers of action (Dweck, 1999). If children believe they
 101 have little or no control (Carpenter, 1992) or are
 102 given less objective control over a stressor (Manne
 103 et al., 1992), they manage stressful events less com-
 104 petently (see Miller et al., 1999, for a review). As a

1 result, children's cognitions interfere with the pro-
 2 duction of evidence that would disconfirm their
 3 expectations of helplessness. Escape can also take
 4 cognitive forms. In addition to physically escaping
 5 situations in which they do not expect to succeed,
 6 children increasingly escape via cognitive means,
 7 such as daydreaming or withdrawal of mental effort
 8 (Zimmer-Gembeck & Skinner, 2009). These forms
 9 of escape may be less disruptive than physical
 10 attempts to leave (in the classroom, for example),
 11 but they are also harder to detect, which means that
 12 they can impede teachers' and other adults' attempts
 13 to remedy them.

14 ***Perceived control and coping during***
 15 ***adolescence***

16 A major shift during adolescence is the potential for
 17 youth to use meta-cognitive strategies when dealing
 18 with challenges and failures (Kuhn & Franklin,
 19 2006; see Compas et al., 2001, for a review). Meta-
 20 cognition, or the capacity to reflect on one's own
 21 cognitive processes, emotions, and actions, provides
 22 at least two advantages to coping. First, it allows a
 23 teenager to use information about the long-term
 24 effects of a course of action in making local deci-
 25 sions about which strategy to use in solving a prob-
 26 lem. The capacity to imagine future emotional and
 27 social consequences of an action extends the poten-
 28 tial effectiveness of coping beyond the current
 29 episode (Aspinwall & Taylor, 1997). Second, meta-
 30 cognition allows adolescents to coordinate multiple
 31 perspectives and alternative pathways in deciding
 32 how to deal with a challenge or setback. They can
 33 comfort themselves using largely cognitive means—
 34 such as telling themselves that a depressed mood
 35 is only temporary—and can coordinate their own
 36 wishes and desires with those of others in their
 37 problem-solving (e.g., Band & Weisz, 1990).
 38 Although representations of attachment figures play
 39 a role in stress reactions beginning in infancy (Lewis
 40 & Ramsay, 1999; Nachmias et al., 1996; Urban,
 41 Carlson, Egeland, & Sroufe, 1991), adolescents
 42 have the potential to construct even more advanced
 43 and coherent representations of others as available
 44 and secure sources of comfort and aid. Hence, ado-
 45 lescents' cognitive representations can serve as stron-
 46 ger and more durable sources of support when
 47 others are not physically present, alleviating distress
 48 and allowing adolescents to better focus their coping
 49 actions (Seiffge-Krenke, 2004; Shaver, Belsky, &
 50 Brennan, 2000).

51 Consistent with growth in meta-cognitive strate-
 52 gies, adolescents experience other cognitive advances

that expand their capacity to manage daily stressors 53
 and major life events. These include abstract rather 54
 than concrete representations, improvements in 55
 working memory capacity, the ability to engage 56
 in multidimensional thinking, and a greater capaci- 57
 ty for self-reflection (Keating, 1999). Moreover, 58
 based on practical experiences, adolescents also gain 59
 knowledge in a range of content areas, including 60
 knowledge about stressful events, controllability, 61
 and coping, which assists them to automatize their 62
 responses or to more easily recognize the most 63
 salient cues and draw upon their knowledge of rel- 64
 evant and useful responses. By having the back- 65
 ground knowledge and the capacity to think about 66
 multiple dimensions and self-reflect, adolescents 67
 often show signs of broader conceptual reorganiza- 68
 tions (Case, 1985; Case, Hayward, Lewis, & Hurst, 69
 1988), and they are more likely to use their new 70
 abilities to adopt the perspectives of others, to nego- 71
 tiate and accommodate, and to consider multiple 72
 solutions to their problems (Seiffge-Krenke, 2004). 73

74 The use of meta-cognitive strategies and other
 75 advances in thinking can have drawbacks, too. The
 76 same skills that permit adolescents to imagine long-
 77 term consequences and think about multiple aspects
 78 of phenomena also permit them to worry about the
 79 future and imagine negative outcomes and failures.
 80 They are more likely than children to ruminate and
 81 worry excessively (Zimmer-Gembeck & Skinner,
 82 2008). The inferential power of adolescents also
 83 allows them to become stuck within a mindset
 84 of helplessness (Dweck, 2002). Once an adolescent
 85 views himself or herself as incompetent, even mul-
 86 tiple experiences of success can be discounted using
 87 inferential tactics—deciding that high performance
 88 is due to luck, easy tasks, or the favor of powerful
 89 others. The capacity to take multiple perspectives
 90 can also be deployed to evade detection when escap-
 91 ing, whether that be via actual physical escape (like
 92 skipping school) or procrastination (like delaying
 93 household chores). Adolescents also have greater
 94 access to and participate in some potentially detri-
 95 mental escape coping behaviors, such as binge
 96 drinking, other drug use, or risky sexual behavior,
 97 and they report that they do so in order to cope with
 98 stress (Frydenberg & Lewis, 2000).

99 ***Perceived control and coping during***
 100 ***adulthood***

101 Compared with childhood and adolescence, age-
 102 graded shifts in the means of exerting control are
 103 not as well documented during adulthood (Baltes &
 104 Baltes, 1986; Lachman & Prenda-Firth, 2004;

1 Wolinsky et al., 2003; Zarit, Pearlin, & Schaie,
2 2003). However, it is assumed that as adults develop
3 domain-specific expertise, they will be more effective
4 in problem-solving and strategizing. One possible
5 new skill is the capacity to integrate and
6 prioritize competing demands (Deci & Ryan, 1985).
7 This would allow people to recognize situations in
8 which different facets of themselves are pulling for
9 different strategies, and to use their genuine priorities
10 to sort out the right course of action for themselves
11 to use in dealing with challenges or failures.
12 This might help explain individuals' increasing
13 capacity to decline to employ the most effective
14 strategy for producing a given outcome, if the strategy
15 has negative side effects, for example, if it violates
16 their own moral code or inflicts harm on
17 someone else (Deci & Ryan, 1985, 2000).

18 During adulthood and old age, changes in how
19 control is exerted seem to be less a function of age
20 and more a function of social structure and the
21 nature of events that are encountered (Aldwin,
22 Sutton, Chiara, & Spiro, 1996; Heckhausen &
23 Schulz, 1998; Zarit et al., 2003). So, for example,
24 social and biological timelines seem to shape individuals'
25 control efforts, with increased activity immediately
26 prior to a developmental deadline (such as childbearing
27 age) and activities focused on devaluing the outcome
28 once the deadline has passed (Schulz, Wrosch, &
29 Heckhausen, 2003). Despite researchers' assumptions
30 that biological and cognitive declines in old age
31 should result in more helplessness and maladaptive
32 coping, empirical evidence contradicts this idea,
33 leading researchers to focus on the capacities of the
34 elderly to deal with objective losses without falling
35 into helplessness (Aldwin, 2007). Moreover, although
36 so far no evidence suggests that it is age-graded,
37 the emergence of wisdom and spiritual developments
38 during adulthood and old age would be likely to
39 reorganize people's coping strategies (Baltes &
40 Staudinger, 1995), including problem-solving and
41 information-seeking, as well as potentially reducing
42 helplessness and the desire for escape.
43

44 ***Summary of developmentally graded*** 45 ***ways of coping organized around control***

46 Development decisively constrains the expression
47 of the four families of coping organized around
48 adjusting actions to be effective in producing desired
49 outcomes. The limited repertoire of infants involves
50 reflexes, temperamental preferences, and action
51 schema. However, if infants have responsive caregivers,
52 their joint coping repertoire is expanded greatly.

53 Infants learn in the first days of life whether their
54 expressed desires create changes in the world. This
55 discovery, the origins of a sense of control, can
56 provide motivation for efforts to deploy increasingly
57 more differentiated and appropriate signals when
58 distressed (Holodynski & Friedlmeier, 2006). Such
59 experiences actually reduce reactivity in stress
60 physiology and prepare the infant to be more
61 curious and active in subsequent interactions with
62 the social and physical world.

63 Consistent with research on regulation, research
64 on control suggests that general mechanisms of
65 coping accumulate developmentally, for example,
66 adding regulation via *action schemes* during
67 infancy, supplemented by coping through *direct
68 action* during preschool age, coping using
69 *cognitive means* during middle childhood, and
70 coping using *meta-cognitive means* during
71 adolescence (Table 3.2; Skinner & Zimmer-
72 Gembeck, 2007). Perhaps these means of coping
73 continue to be integrated and elaborated during
74 adulthood, becoming more selective and flexible,
75 at the same time that the development of
76 domain-specific expertise enriches coping
77 capacity in selected areas. The entire repertoire
78 will be needed to deal adaptively with the
79 normative challenges of aging (Aldwin, 2007).

80 These developmental phases are accompanied by
81 different kinds of participation by social partners.
82 During infancy, caregivers carry out coping actions
83 based on the expressed intentions of their infants.
84 During toddlerhood and preschool age, children
85 directly enlist the participation of social partners.
86 During middle childhood, children are increasingly
87 able to coordinate their coping efforts with those
88 of others, consulting both peers and adults. By
89 adolescence, social partners are a backup system,
90 with much of their functioning expressed through
91 the internalization of values and guides by the
92 adolescent. During adulthood, individuals create
93 their own dyadic and family-level coping systems
94 to which they contribute and that shape their own
95 stress reactions and coping (Berg et al., 1998).
96 During later life, the loss of social partners and
97 roles requires significant adjustment to maintain
98 high-quality coping, and constructive help from
99 social partners (e.g., an aging spouse, siblings,
100 or adult children) is an important interpersonal
101 resource for coping (Aldwin et al., 2009; Zarit
102 et al., 2003). Throughout the lifespan, reliance
103 on others when dealing with stressful life events
104 is both normative and adaptive (Newman, 2000).
105 In fact, learning to "cope well with others" is
106 an important developmental task at every age
107 (Berg et al., 1998).

Table 3.2 Broad outlines of possible developmental shifts in means of coping

Developmental Period	Approximate Ages	Nature of Coping	Role of Social Partners	Nature of Regulation
Infancy	Birth to 18 months	From reflexes to coordinated <i>action schema</i>	Carry out coping actions based on infant's expressed intentions	Interpersonal co-regulation
Preschool age	Ages 2 to 5	Coping using voluntary <i>direct actions</i>	Available for direct help and participation	Intrapersonal self-regulation
Middle childhood	Ages 6 to 8	Coping using <i>cognitive means</i>	Cooperate with and support child's coping efforts	Coordinated self-regulation
Early adolescence	Ages 10 to 12	Coping using <i>meta-cognitive means</i>	Reminder coping	Proactive self-regulation
Middle adolescence	Ages 14 to 16	Coping based on <i>personal values</i>	Backup coping	Identified self-regulation
Late adolescence	Ages 18 to 22	Coping based on <i>long-term goals</i>	Monitoring coping	Integrated self-regulation

1 **Development of Perceived Control and** 2 **Age-Graded Shifts in Coping**

3 The second way that work on perceived control may
4 be able guide the developmental study of coping is
5 to use research on age changes in the processes of
6 perceiving and interpreting control experiences to
7 identify developmental periods marked by qualita-
8 tive changes, and to explore whether they corre-
9 spond to landmark shifts in processes of coping. In
10 examining the development of perceived control,
11 researchers find it useful to organize the variety of
12 constructs populating the area according to the
13 functions they serve in an action sequence, such as a
14 coping transaction (Heckhausen, 1991; Skinner,
15 1995). Beliefs that come into play *prior* to the ini-
16 tiation of action can be thought of as regulatory
17 beliefs; beliefs that make sense of action sequences
18 *after* they have occurred can be referred to as inter-
19 pre-tative beliefs. Regulatory beliefs launch and
20 guide coping; they shape whether and how people
21 approach and engage in a stressful transaction. The
22 beliefs that regulate action are *control beliefs* or the
23 sense that "I can do it." Various labels as per-
24 ceived control, sense of control, expectancies of suc-
25 cess, and self-efficacy, these constructs refer to
26 generalized expectations that the self can produce
27 desired and prevent undesired outcomes.

28 After performance outcomes, individuals employ
29 interpretative beliefs to translate the causal meaning
30 of the action episode. These include people's expla-
31 nations about the likely causes of desired and unde-

sired events (also called *strategy* beliefs), as well as
people's explanations about their own role in pro-
ducing success or failure (also known as *capacity*
beliefs). Strategy beliefs refer to generalized expect-
ancies about the effectiveness of certain causes
(such as effort, ability, powerful others, luck, and
unknown); they are similar to locus of control,
causal attributions, explanatory style, or response-
outcome expectancies. Capacity beliefs refer to
generalized expectancies about the extent to which
the self possesses or has access to potentially effec-
tive causes; they are similar to self-efficacy, perceived
competence, or perceived ability (Connell, 1985;
Skinner, 1995, 1996; Weisz, 1986). Both strategy
and capacity beliefs are important in interpreting
the meaning of a causal episode. For example, indi-
viduals may believe that effort is a good *strategy*
for success, but doubt that they have the personal *capac-*
ity to exert effort. Unknown strategy beliefs, or the
conviction that one has no idea how to succeed, are
some of the most pernicious and maladaptive beliefs
people can hold and, developmentally, some of the
earliest predictors of helplessness (Connell, 1985).

Profiles of control

Patterns of perceived control can be identified that
are powerful predictors of motivation, performance,
and coping. Optimal profiles include high control
expectancies, high beliefs in effort as a strategy, and
high confidence in one's own capacities, combined
with low dependence on uncontrollable strategies

(such as ability, powerful others, luck, and unknown). In contrast, the most maladaptive profile incorporates a low generalized sense of control, low beliefs in effort as an effective strategy, and low confidence in one's own capacities, combined with high reliance on uncontrollable strategies. Aggregate scores created to reflect these profiles in the academic domain are strong predictors of engagement, achievement, and eventually retention or dropout, all the way from elementary to high school (e.g., Connell et al., 1994, 1996; Skinner et al., 1998).

Developmental course of perceived control

Distinguishing among these different kinds of beliefs has been important for research on development because different aspects of perceived control show different patterns of age-graded change¹ (Skinner et al., 1988). In general, young children's beliefs start out optimistic, undifferentiated, and unrealistic, in that their outcome expectations are much higher than their actual levels of performance would warrant (Stipek et al., 1992). It is as if young children have an amalgamated sense of personal force, which incorporates not only actual effectiveness but also the intensity of their wishes and desires. At the most general level, normative development involves successively differentiating other important causes from this amalgam, coming to recognize, for example, the roles played by other people, task difficulty, luck, and ability (Weisz, 1980, 1981, 1986). Children become more effective agents as they increasingly understand how outcomes are shaped by the interplay among multiple necessary and sufficient causes. In this sense, normative change is a series of developments leading toward more realistic and complex causal schema as children grow older (Sedlak & Kurtz, 1981; Weisz, 1983, 1984).

At the same time, however, an increasingly realistic understanding of how to exert control comes with a potential downside. As children become more clear about the important role played by causes other than personal force, their sense of their own competence (which relies on the strength of personal force) is naturally diminished. This general pattern can be discerned in research on the development of children's causal conceptions and perceived competence in the academic domain (Skinner et al., 1998; Weisz, 1986). As causal schema develop that allow children to successively differentiate conceptions of effort from the contributions of other people, from their own desires and wishes, from task difficulty, from luck, and from ability, a steady decline in children's sense of their own competence

can be detected (Stipek & Daniels, 1988), accompanied by evidence that these perceptions come to be calibrated to their actual levels of performance (e.g., Stipek, 1984).

In integrating work on development with research on individual differences, the key question for control theorists becomes: How can children's generalized sense of control, which ideally would remain strong, weather the successive developments needed to produce a more realistic understanding of the complexity (and potential uncontrollability) of causes? In other words, how can children construct a successively more complex and veridical picture of causal phenomena without exerting so much downward pressure on their control expectancies that it undermines their motivation, engagement, and coping? We consider these questions briefly for three well-documented developmental shifts that take place during early childhood, middle childhood, and early adolescence. We also speculate about some less well-studied shifts during adulthood and aging. In keeping with a multi-level developmental framework, the answers to these questions include a consideration of what the individual brings from previous developmental periods, as well as the nature of the current shift (typically based on underlying cognitive developments), and the demands and supports provided by social partners in the current context.

Differentiating self and other as causes of outcomes

Sometime during the second year, children come to appreciate the difference between the actions of the self and those of other people as causal factors in producing task outcomes (Heckhausen, 1982, 1984). In the parlance of control, conceptions of personal force no longer include concrete instrumental help from others. Hence, to feel efficacious, a toddler needs to "Do it myself!" (Geppert & Kuster, 1983). This development may be one factor underlying the emergence of the desire for autonomous action, which is a marked characteristic of 2-year-olds (Heckhausen, 1988). In terms of coping, such a development suggests that caregivers may need to take a step back from directly carrying out coping actions for children or risk undermining their sense of control. However, despite the fact that it reflects a cognitive advance and may contribute to gains in self-reliance, the loss of direct physical assistance from caregivers seriously limits what children are able to achieve, and so creates its own corresponding risk of helplessness.

1 To negotiate this transition in ways that support
 2 independence and still preserve a sense of efficacy,
 3 caregivers are required to show careful developmen-
 4 tal attunement during coping episodes (Kliewer,
 5 Sandler, & Wolchik, 1994). Caregivers can gently
 6 move to more distal forms of support, scaffolding
 7 toddlers' performance with suggestions, ideas, and
 8 encouragement. Patience is also required, as children's
 9 initial struggles take longer than caregivers' solu-
 10 tions, and children's frustration and discouragement
 11 may be difficult for caregivers to tolerate. In a sense,
 12 caregivers now move to standby alert, so they are
 13 available if children ask for direct help, to respond
 14 with a teaching attitude, suggesting to the child
 15 "I'll show you how, so you can do it yourself."

16 The transition in modes of coping is smoother if,
 17 prior to toddlers' demands for independence, care-
 18 givers have a history of actively promoting children's
 19 skill acquisition and independent coping. This
 20 increases the likelihood that toddlers have more
 21 actual competence at their disposal when attempt-
 22 ing to be self-reliant. Moreover, the handoff to more
 23 independent coping is facilitated by a secure attach-
 24 ment, based on a previous history of sensitive coop-
 25 eration between caregiver and child. This results in
 26 more flexibility on the child's part in relying on and
 27 welcoming appropriate forms of participation from
 28 caregivers. It also supports the development of a
 29 child's sense that he or she has access to powerful
 30 others during coping episodes. In contrast, when
 31 caregivers are intrusive and continue to insert them-
 32 selves into children's coping episodes when help is
 33 not needed or over children's protests, children can
 34 become helpless, passive, resistant, or angry
 35 (Pomeranz & Eaton, 2000, 2001). In a similar vein,
 36 when children try to cope by themselves with events
 37 that overwhelm them, such as often occurs with
 38 neglectful parenting, children can become discour-
 39 aged, confused, or anxious. Both intrusive and
 40 neglectful parenting undermine the development of
 41 self-reliant strategies for dealing with challenges and
 42 threats, as well as interfering with a sense of control
 43 (Flammer, 1995; Skinner, 1995).

44 No wonder this transition can feel like a balanc-
 45 ing act, in which caregivers are continually gauging
 46 whether children are competent enough to handle
 47 certain tasks on their own and how to provide the
 48 minimum support necessary to allow toddlers to
 49 eventually achieve success through their own sus-
 50 tained efforts (Heckhausen, 1988; Skinner & Edge,
 51 1998). Ensuring that the challenges toddlers face
 52 are developmentally appropriate, in turn, depends
 53 not only on whether caregivers can show the kind

of authoritative parenting that sets firm limits on
 the everyday tasks toddlers are allowed to tackle,
 but also on whether caregivers have the higher-
 order resources they need to keep overwhelming
 stressors out of their children's lives (Tolan & Grant,
 2009).

Throughout coping episodes, of critical impor-
 tance are the explanations that caregivers offer chil-
 dren for their successes and failures (Dweck &
 Molden, 2005). The most beneficent attributions
 are ones that direct children's causal interpretations
 toward their efforts and strategies, and away from
 their permanent characteristics and abilities. Perhaps
 surprisingly, even praise for *positive* traits, such as
 goodness and smartness, focuses children's attention
 on the causal force of immutable entities, which are
 by definition uncontrollable (Kamins & Dweck,
 1999). Of course, when children do not succeed
 and adult help is needed, caregivers can assure chil-
 dren that they will be successful at more difficult
 tasks by themselves when they are older and have
 more practice.

Social comparison, perceived control, and coping

Starting in about fifth grade, children become more
 interested and able to use the performances of peers
 as a standard against which to measure their own
 levels of performance (Ruble, 1983). This new skill
 reflects a gain in the accuracy of control beliefs in
 that normative performance information allows
 children to distinguish task difficulty (when every-
 one performs poorly) as a cause of performance out-
 comes. It also allows children to recognize when it is
 something about their own action that is contribut-
 ing to performance, namely, when their own level of
 performance differs from the norm (i.e., when they
 perform better or worse than everyone else) (Weiner,
 1986). Social comparison can be seen in many
 domains in middle childhood, but it is most obvi-
 ous in areas that are highly valued by the social con-
 text, and in which outcomes are directly compared
 and evaluated, such as in school, sports, physical
 appearance, and popularity.

Social comparison can serve useful purposes
 when coping. An accurate estimate of difficulty can
 be used to gather the resources and allow the time
 needed to be effective. If one is performing poorly
 on tasks while others are succeeding, it can also be
 interpreted as information that one needs to apply
 more effort or try different strategies. In fact, down-
 ward social comparison seems to be an important
 mechanism for dealing with losses during old age,

1 when the elderly compare their well-being and
 2 performance with other people their own age, and
 3 note that they themselves are better off in compari-
 4 son (e.g., Heckhausen & Krueger, 1993).

5 However, despite the fact that better estimates of
 6 task difficulty represent a cognitive advance, they
 7 also create a potential vulnerability for coping and a
 8 sense of control. When dealing with difficulties and
 9 setbacks, they can add the burden of self-evaluation,
 10 of “looking over one’s shoulder” at how everyone
 11 else is doing. For children who are lagging behind
 12 their age-mates, it is easy to become discouraged
 13 and to denigrate their own potential. Such a mind-
 14 set adds stress to already demanding situations and
 15 subtracts resources that could be used for coping.
 16 It can even be a basis for devaluing whole areas of
 17 activity, namely, those in which one is behind or in
 18 which one needs to exert much more effort com-
 19 pared to others. It is a sad irony that such decisions
 20 can steer children away from precisely those activi-
 21 ties where more experience and practice could lead
 22 to improvement.

23 This transition is easier for children who have
 24 developed adequate levels of social, academic, and
 25 physical competence *before* social comparison comes
 26 online. Social partners, both adults and peers, can
 27 also ease the transition if they encourage children to
 28 use normative comparisons as information about
 29 task difficulty and effort, but not about capacity
 30 (Dweck, 1999). At the level above individual part-
 31 ners, social contexts communicate key messages
 32 about the centrality and meaning of performance
 33 comparisons (Elliot, 1999). For example, work on
 34 achievement goals shows that explicit rankings and
 35 competition, which characterize many schools,
 36 sports teams, and peer groups, exacerbate the poten-
 37 tial negative impact of social comparison, leading
 38 children to focus on their relatively stable attributes
 39 as causes of performance and to avoid participation
 40 in areas where their rankings are low (Anderman
 41 et al., 2002).

42 In contrast, social groups or classrooms with a
 43 “learning” orientation lead children to concentrate
 44 on effort and improvement, emphasizing intra-indi-
 45 vidual comparisons in which children track their
 46 own past performance to mark progress. Participation
 47 in activities in which sustained practice results in
 48 obvious improvements, such as sports or the cre-
 49 ative arts, is a concrete operational way to demon-
 50 strate to children that sustained effort has the power
 51 to lift their level of performance. Of course, high-
 52 quality teaching or tutoring (which transmits effec-
 53 tive strategies) as well as consistent practice are

necessary if children’s efforts are to be effective in 54
 boosting their performance outcomes. 55

***Conceptions of ability, perceived control, 56
 and coping 57***

In late middle childhood or early adolescence 58
 (between the ages of 10 and 12), children come to 59
 understand the cognitively complex notion of ability 60
 (Nicholls, 1978). “Ability” is an inferential concept; 61
 it represents an invisible capacity that can only be 62
 inferred from a pattern of performance outcomes: 63
 success on normatively hard tasks with little effort. 64
 To make such inferences, children must be cogni- 65
 tively capable of understanding inverse compensa- 66
 tory relations between effort and ability (Miller, 67
 1985; Nicholls, 1984). This means children under- 68
 stand that to produce the same outcome, smart 69
 children do not need to try as hard. With this cogni- 70
 tive advance, however, comes the vulnerability 71
 described as “the double-edged sword of effort” 72
 (Covington & Omelich, 1979), in which children 73
 come to see that high exertion that ends in failure 74
 can imply low ability, thus making all-out effort a 75
 potentially risky proposition. At this age, the aspects 76
 of perceived control that best predict engagement 77
 (and that are best predicted by performance) change 78
 from those focused on the capacity to exert effort to 79
 those focused on one’s own level of ability (Skinner 80
 et al., 1998). 81

In early studies of the development of learned 82
 helplessness, researchers hypothesized that young 83
 children, because they did not have the cognitive 84
 capacity to infer ability, would be shielded from the 85
 effects of non-contingency, and that all children, 86
 once they acquired “mature” conceptions of ability 87
 during early adolescence, would be more vulnerable 88
 to helplessness. However, both these hypotheses 89
 turned out to be incorrect. For younger children, 90
 research shows that there is no age at which they are 91
 free from the effects of repeated failure (Burhans & 92
 Dweck, 1995). Instead, the experiences that pro- 93
 duce helplessness are different for younger children. 94
 In early elementary school, more concrete tasks and 95
 more directly observable outcomes exacerbate the 96
 effects of repeated failure (e.g., Boggiano et al., 97
 1993). Moreover, although young children are 98
 not able to make complex inferences about the rela- 99
 tions of patterns of outcomes to levels of ability, 100
 they can construct conceptions of their traits (e.g., 101
 goodness and badness) as fixed and immutable 102
 (Dweck, 1999). These are the experiences and belief 103
 systems that make young children more vulnerable 104
 to helplessness. 105

1 For older children and young adolescents, it
 2 turns out that the effects of cognitive advances on
 3 control and coping depend completely on the social
 4 context, both local and cultural. When children
 5 acquire the cognitive capacity to understand inverse
 6 compensatory relations among causes, they will
 7 apply these schema to effort and ability *only* in
 8 cultures (such as the United States) that endorse
 9 conceptions of ability as a fixed entity that can be
 10 diagnosed from levels of performance (Nicholls,
 11 1984; Rosenholtz & Simpson, 1984). Moreover,
 12 these cultural conceptions must be communicated
 13 to children, for example, by teachers who respond
 14 to children's failures by doubting their capacities
 15 (Graham, 1990). Finally, these messages must be
 16 internalized by children, so that they are convinced
 17 that their own ability is a fixed immutable entity
 18 that is demonstrated by every performance (Dweck,
 19 1999). In contrast, if children operate in classrooms
 20 and cultures that allow them to continue to see abil-
 21 ity or competence as a flexible, incremental attri-
 22 bute, open to cultivation through effort and practice,
 23 young adolescents (despite cognitive advances) will
 24 maintain a high sense of control and high levels
 25 of effort and engagement in the face of obstacles
 26 and setbacks (Mueller & Dweck, 1998).

27 *Adulthood and aging*

28 Work during adulthood and old age has not been
 29 able to identify specific age-graded changes in per-
 30 ceived control (Aldwin, 2007; Baltes & Baltes,
 31 1986; Lachman & Prenda-Firth, 2004; Wolinsky
 32 et., 2003; Zarit, Pearlin, & Schaie, 2003). However,
 33 lifespan theories have suggested that a general shift
 34 from primary to secondary control takes place across
 35 later life (Heckhausen & Schulz, 1995). In this
 36 context, primary control refers to reliance on proto-
 37 typical control strategies, such as effort and instru-
 38 mental action, aimed at bringing the external world
 39 in line with one's own preferences, whereas second-
 40 ary control refers to effort that "targets the self and
 41 attempts to achieve changes directly within the
 42 individual" (1995, p. 285).

43 The basic idea is that, due to societal constraints
 44 and biological declines, people are not as able to
 45 exercise primary control as they age, so they come
 46 to rely more and more on secondary control. Two
 47 main kinds of secondary control can be distin-
 48 guished. The first refers to secondary control as a
 49 backup system: After initial attempts have failed,
 50 people can shift resources from other endeavors to
 51 the implementation of the blocked goal (Thompson

et al., 1998). This kind of control, sometimes referred
 to as compensatory secondary control, includes pro-
 cesses like increased efforts or the construction of
 new strategies. Especially important during aging,
 secondary control increasingly involves having access
 to the resources of others (such as doctors or one's
 adult children) through "proxy" control (Bandura,
 1997; Brandtstädter & Renner, 1990; Heckhausen
 & Schulz, 1995).

The second kind of secondary control refers to a
 hierarchy of outcomes. From this perspective, when
 it is no longer possible to "fix" the primary outcome
 of choice, people can shift their focus toward "sec-
 ondary" targets that are more amenable to control.
 For example, in the face of a chronic medical condi-
 tion, elderly people can shift their focus from find-
 ing a cure to having an impact on the daily symptoms
 or treatment of the condition, and minimizing its
 effects on others (Thompson et al., 1993). This kind
 of secondary control can also include attempts to
 influence one's own internal states (such as emo-
 tional reactions or attitudes) (Heckhausen & Schulz,
 1995); these are also studied as emotion regulation
 (Gross, 1998).

Many of these "secondary control strategies"
 have already been studied in research on coping,
 which is the more common term used to describe
 how people deal with losses, failures, and difficulties
 that threaten control (Folkman, 1984; Lockenhoff
 & Carstensen, 2003). Both coping and secondary
 control can serve to create control experiences even
 in "low control" circumstances (Thompson et al.,
 1993). In fact, people's ingenuity in finding second-
 ary outcomes they can influence, even in "uncon-
 trollable circumstances," has compelled researchers
 to rename such real-life situations as "low control"
 circumstances. Outside of the laboratory, research-
 ers have not been able to identify any situations in
 which people cannot find something of value to
 influence. Hence, it is possible that these ways of
 coping, or secondary control strategies, are elabo-
 rated and consolidated as people age, perhaps result-
 ing in increased confidence in one's capacity to enact
 them (also called coping self-efficacy), despite nor-
 mative declines in primary control.

Coping as a Process that Shapes the Development of Perceived Control and Competence

The third and final goal of this chapter is to high-
 light the reciprocal dynamics that exist between
 control and coping. If coping describes how people

1 deal with ongoing challenges, difficulties, and fail- 52
2 ures, then it becomes clear that coping transactions 53
3 are an important form of control experiences. That 54
4 is, the ways in which people actually approach and 55
5 engage with real-life stressors, how they cope, is the 56
6 grist from which perceptions of control are shaped. 57
7 All of the basic elements of the coping process 58
8 can be found in theories about the construction of 59
9 control, namely, the actual stressor and its objective 60
10 controllability, the individual's personal resources 61
11 (including previous perceived control and actual 62
12 competence), and the participation of social con- 63
13 texts (e.g., the availability and responsiveness of 64
14 social partners). Hence, one important resource that 65
15 can be influenced by coping is an individual's sense 66
16 of control, with adaptive coping promoting con- 67
17 fidence, perceived competence, and a focus on 68
18 mastery, and maladaptive coping contributing to 69
19 helplessness. 70

20 *Failure experiences and perceived control*

21 One situation in which coping can have a decisive 71
22 effect on a sense of control is when individuals 72
23 are dealing with objectively uncontrollable events 73
24 and losses. As mentioned previously, the notion of 74
25 secondary control has been useful in understanding 75
26 how people can deal adaptively with situations 76
27 where primary control is not working, and has 77
28 helped explain how people, when they do succumb 78
29 to experiences of non-contingency and loss, can 79
30 navigate their way back from helplessness. Control- 80
31 related conceptions of secondary control focus on 81
32 strategies that increase effort and concentration, 82
33 access supplementary social resources, and locate 83
34 sub-goals where control can be effectively enacted. 84
35 These coping strategies create a feedback loop back 85
36 toward a sense of renewed efficacy and control.

37 Equally important in dealing with uncontrolla- 86
38 ble events and failures are coping *appraisals*. Decades 87
39 of research on causal attributions and explanations 88
40 have demonstrated that, although unsuccessful 89
41 attempts to produce a desired or prevent an unde- 90
42 sired outcome are a risk factor for becoming help- 91
43 less, it is the *interpretation* of the experience that 92
44 mediates its effects on subsequent control expecta- 93
45 tions (e.g., Abramson et al., 1978; Weiner, 2005). 94
46 Work on control paints a clear picture of the kinds 95
47 of appraisals that support adaptation in the face of 96
48 failures, as well as the important roles played by 97
49 social partners in shaping those appraisals. 98

50 Although some theories emphasize the importance 99
51 of attributions of failure to unstable and uncontrollable 100

causes (most notably lack of effort), the overarching 52
mindset that seems to promote a sense of control is 53
the conviction that all transactions contain impor- 54
tant information about how to produce outcomes, 55
that is, how to exert control. Failures and mistakes 56
can be “our friends” in that they tell us what isn't 57
working “yet.” They can imply that more effort, 58
time, or concentration is needed, that different 59
actions or better strategies are required, and that 60
the task is harder than expected (Dweck, 1999). 61
Interestingly enough, such a mindset even allows 62
people to discover more quickly that tasks are objec- 63
tively unsolvable and so to stop working on them 64
sooner (Janoff-Bulman & Brickman, 1982). 65

66 It turns out that social factors are critical to the 67
68 development of this mindset. Parents, teachers, and 69
70 friends who view mistakes and “failures,” not as 71
72 embarrassing and shameful events to be hidden, but 73
74 as fascinating learning opportunities will invite chil- 75
76 dren to see them the same way (Dweck & Molden, 76
77 2005). Although studied most often during child- 78
79 hood and in the academic domain, there is no 80
81 reason to think that the same principles would not 82
83 apply at other points in the lifespan and in other 84
85 arenas. For example, during old age, when elderly 86
87 people make mistakes or can no longer perform at 88
89 previous levels, it is easy for them and their social 90
91 partners to see these “failures” as signs of irreversible 92
93 losses of aging. Alternatively, they can be viewed as 94
95 temporary setbacks that can be worked around or 96
97 compensated for by various coping strategies, such 98
99 as increased practice, external aids, or social sup- 100
101 ports. This mindset facilitates the types of coping 102
103 that maintain a sense of control late into old age.

104 *Beyond control in processes of coping and resilience*

105 At the same time, the picture painted in the control 106
107 area is incomplete. Recovery from setbacks, losses, 108
109 and helplessness can be conceived more broadly as 110
111 issues of resilience, and there can be no question 111
112 that true resilience relies on other adaptive pro- 112
113 cesses in addition to control (Brandstädter & 113
114 Rothermund, 2002). The analyses of coping fami- 114
115 lies can immediately suggest two additional funda- 115
116 mental processes by which coping contributes to 116
117 resilience: one organized around *relatedness* and one 117
118 around *autonomy* (Baumeister & Leary, 1995; 118
119 Connell & Wellborn, 1989; Deci & Ryan, 1985; 119
120 Skinner & Wellborn, 1994). The primary ways of 120
121 coping that follow from relatedness are part of the 121
122 family of *seeking social support* (see Table 3.1). 122

1 Support-seeking seems to be a general all-purpose
 2 strategy that is extremely common at every age
 3 (Skinner et al., 2003; Zimmer-Gembeck & Skinner,
 4 2009). It can include contacts that directly support
 5 control—for example, asking for advice about effective
 6 strategies or requesting direct help. However,
 7 support-seeking adds value to resilience beyond its
 8 instrumental potential. Processes of relatedness can
 9 add perspective to issues of control (e.g., “I love you
 10 whether or not you get that outcome”), failure (e.g.,
 11 “You did everything you could”), and disappoint-
 12 ment (“Well, we still have each other, so it’s really
 13 not so bad”). And when it really is so bad, such as
 14 dealing with the death of a loved one, the presence
 15 and support of caring others can provide comfort,
 16 distraction, and healing, even when there is nothing
 17 to be done (Stroebe et al., 1996).

18 The adaptive function of autonomy is to coordi-
 19 nate preferences with available options, and the
 20 adaptive families of coping organized around auton-
 21 omy are negotiation and accommodation (see
 22 Table 3.1). *Negotiation*, of course, refers to attempts
 23 to locate or create desirable options, and so clears
 24 the way for control efforts aimed at securing those
 25 options. However, in the control area, much more
 26 interest has been focused on processes of *accommo-*
 27 *dation*, which allow people to actually adjust their
 28 preferences to fit within existing constraints
 29 (Brandtstädter & Renner, 1990). Once considered
 30 part of secondary control, researchers now view it
 31 as a distinguishable set of processes that involve
 32 fit, “going with the flow,” willing acceptance, acqui-
 33 escence, adjustment, and “getting into it” (Morling
 34 & Evered, 2006, 2007; Rothbaum et al., 1983;
 35 Skinner, 2007). As opposed to control-related pro-
 36 cesses of secondary control, which involve adding
 37 instrumental resources or changing the self to be
 38 more effective, accommodation has nothing to do
 39 with control: it is about letting go of desired out-
 40 comes and previously held goals (Brandtstädter &
 41 Rothermund, 2002; Skinner, 2007). Researchers
 42 emphasize that accommodation can be adaptive
 43 when primary control is not available. However, it
 44 can also be used as a *first* line of defense, with pri-
 45 mary control engaged only if accommodation
 46 proves impossible. In many cases, accommodation
 47 can replace primary control all together from the
 48 outset, for example, in situations where people feel
 49 that pursuing control (even successfully) would use
 50 too many resources, upset relationships, or interfere
 51 with other more important commitments.

52 The opposite of accommodation is not control, it is
 53 “rigid perseveration,” in which an outcome is inflexibly

pursued no matter what the cost (Brandtstädter & 54
 Renner, 1990). No complete analysis has been made 55
 of the processes that defuse rigid perseveration and 56
 allow accommodation to occur when coping with 57
 stressful life events (Brandtstädter & Rothermund, 58
 2002). However, it is likely that strategies will include 59
 cognitive restructuring and focusing on the positive 60
 aspects of the current situation, making meaning 61
 and finding benefits in adversity, distraction with 62
 genuinely pleasurable alternative activities (Folkman 63
 & Moskowitz, 2000; Thompson, 1985), and inten- 64
 tionally seeking downward social comparisons. Broad- 65
 ening the study of resilience to include not only 66
 strategies of control but also ways of coping orga- 67
 nized around relatedness and autonomy will provide 68
 a more complete picture of the processes needed to 69
 deal constructively with stress and adversity. 70

71 **Implications for Research on the** 72 **Development of Coping**

73 The central implication of a developmental analysis
 74 of perceived control is that the study of coping as it
 75 develops can be organized around specific ages during
 76 which children’s understanding of control undergoes
 77 qualitative shifts, likely based on underlying tem-
 78 peramental traits, as well as physiological, neurologi-
 79 cal, and cognitive developments and changes in the
 80 environmental challenges and supports available to
 81 children. These shifts produce changes in the strate-
 82 gies individuals use to coordinate actions with con-
 83 tingencies in the environment and in the causal
 84 schema they use to predict and process causal experi-
 85 ences. Both of these changes shape the ways people
 86 cope, and so can be used to focus the developmental
 87 study of coping on specific age windows during
 88 which corresponding qualitative shifts in coping may
 89 be found.

90 *Developmentally graded ways of coping*

91 An analysis of age-graded changes in the means for
 92 exerting mastery and becoming helpless has impor-
 93 tant implications for the measurement of coping.
 94 First, assessments of coping should include develop-
 95 mentally appropriate markers of all four coping
 96 families organized around control (i.e., problem-
 97 solving, information-seeking, helplessness, and
 98 escape) at every age. Second, when studies seek to
 99 examine age differences or changes, they should be
 100 sure that assessments distinguish each of the means
 101 hypothesized to characterize coping at different
 102 ages, for example, both behavioral and cognitive
 103 means of problem-solving and escape (Zimmer-
 104 Gembeck & Skinner, 2009).

1 This analysis also suggests that developmental
 2 studies should examine qualitative changes in cop-
 3 ing as a supplement to the typical focus on quantita-
 4 tive changes. For example, an important empirical
 5 question would be whether one developmentally
 6 graded form of coping predicts the subsequent use
 7 of a different, but functionally analogous, way of
 8 coping at later ages; and whether during transitions
 9 when both forms should be readily accessible, the
 10 two forms of coping are tightly coupled. Research
 11 could also examine whether developmentally-graded
 12 members of the same family become hierarchically
 13 organized as new forms are added, and could inves-
 14 tigate the factors that determine which of the strate-
 15 gies from a person's repertoire will be deployed in a
 16 given transaction. For example, do children and
 17 youth fall back on earlier forms of coping as stress
 18 levels rise, and do they return to more mature forms
 19 as social supports increase? Such studies will add to
 20 our understanding of the "building blocks" of the
 21 area, namely, ways of coping—and should help to
 22 move dominant conceptualizations in the field
 23 beyond an age-delimited focus on individual differ-
 24 ences and toward a view of coping as an increasingly
 25 elaborated and flexible repertoire of developmentally
 26 ordered responses.

27 ***Qualitative shifts in the understanding***
 28 ***of control***

29 The development of perceived control includes the
 30 construction of increasingly complex schema for
 31 analyzing multiple causes of success and failure as well
 32 as increasingly veridical analyses of individuals' own
 33 roles in producing desired and preventing undesired
 34 outcomes. These qualitative shifts represent progress
 35 toward more accurate prediction and analysis of causal
 36 experience. However, each transition also represents a
 37 potential turning point during which vulnerabilities
 38 can be introduced that will undermine subsequent
 39 confidence, engagement, and coping. Future research
 40 can focus short-term longitudinal studies on these nor-
 41 mative shifts as time windows that may be critical to
 42 the development of coping. Explanatory studies can
 43 locate normative shifts by focusing on the cognitive
 44 developments that likely underlie qualitative changes
 45 (Band & Weisz, 1990). Such studies should incorpo-
 46 rate important predictors of how the transition will
 47 be negotiated, including the individual's previous level
 48 of functioning and the nature of the demands in the
 49 current situation, especially their severity and objective
 50 controllability.

51 Theories of control also highlight the importance
 52 of mapping the roles of social partners, especially

caregivers, in shaping the development of coping. 53
 They are critical in helping children achieve norma- 54
 tive developments in causal understanding 55
 without undercutting their initially high sense of 56
 efficacy. At the same time, studies should include 57
 information from multiple levels of the social con- 58
 text, not only about immediate social partners 59
 who participate in coping transactions but also about 60
 the social climates and societal assumptions that 61
 frame these transactions. Pivotal in this regard are 62
 societal and individual mindsets about the nature of 63
 personal force, whether it is a stable immutable 64
 entity that is displayed by every performance or, 65
 instead, is a dynamic plastic capacity that can be 66
 improved through sustained effort and practice 67
 (Dweck, 1999). 68

69 Studies can include key markers of how the
 developmental shift is progressing, such as individu- 70
 als' appraisals and reappraisals of the transaction 71
 as well as the strategies that people are actually using 72
 to cope with real-life demands—the balance of 73
 constructive (e.g., problem-solving, information- 74
 seeking) and maladaptive (e.g., helplessness, escape) 75
 ways of coping, and the general reliance on immat- 76
 ure, age-appropriate, or mature strategies. Research 77
 can also trace the emergence of new and adaptive 78
 ways of dealing with stress and follow their integra- 79
 tion into an increasingly dependable yet flexible 80
 repertoire of coping strategies. Critical in this regard 81
 would be the identification of factors that allow 82
 people to maintain access to the most constructive 83
 ways of coping in their current repertoire. 84

85 Especially important to assess across these transi-
 tions would be the individual's sense of control and
 efficacy, which can survive normative improvements
 in causal understanding only if children and youth
 (and adults) repeatedly experience transactions with
 the environment in which outcomes of value can be
 achieved through sustained effort. Such experiences
 require objective control conditions characterized
 by contingency, responsiveness, and manageable
 levels of difficulty, which remain attuned to the
 person as he or she develops. They also require judi-
 cious social support and the development of increas-
 ing levels of actual competence in the person. Such
 a view makes clear the interlocking dynamics of per-
 ceived control and coping, and how previous coping
 episodes are carried forward in individuals' own
 characteristics and in their social relationships. From
 this perspective, adaptive coping is the grist from
 which a sense of control is won just as control, strat-
 egy, and capacity beliefs permeate stress appraisals
 and coping responses. 105

1 Conclusion

2 Both perceived control and coping have largely
3 been conceptualized and studied as individual dif-
4 ferences phenomena. We hope that by focusing on
5 what is known about the development of perceived
6 control, and highlighting its connections to coping,
7 this chapter may contribute to progress in realizing
8 a developmental agenda for the study of coping.
9 This agenda will conceive of coping as an organiza-
10 tional construct that has the potential to provide an
11 integrative link across multiple levels—from the
12 physiological processes of individual stress reactions
13 to the sociocultural forces that determine the stres-
14 sors societies allow into people's lives.

15 Note

16 1. Since the most detailed research on development has been
17 conducted in the achievement domain, many of the findings
18 about age changes cannot yet be generalized to other domains
19 of functioning during childhood (for example, peers, or physical
20 or artistic endeavors) or during adulthood (for example, work,
21 romantic relationships, or health).

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