

COPING AND SELF-REGULATION ACROSS THE LIFE SPAN

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Both coping and self-regulation have become very popular constructs, studied by researchers concerned with different life stages, from infancy through very late life. However, child and adult developmentalists have had differing emphases and theoretical roots, which have resulted in interesting similarities and discrepancies in their conceptions of coping and self-regulation. We have recently completed comprehensive surveys of how coping and self-regulation change across the life span (Aldwin, Yancura, & Boeninger, *in press*; Skinner & Zimmer-Gembeck, 2009), and three interesting cross-cutting themes emerged. These are control and accommodation as complementary coping processes; the embeddedness of coping in social relationships, especially dyadic relationships; and the adaptive processes of energy regulation. The purpose of this chapter is to investigate these three important themes in greater depth. We will show how the differences in treatment of these ideas in the fields of child and adult development can extend our understanding of adaptation across the life span. Coping and self-regulation from a life-span perspective have relevance for a number of fields, including childhood trauma (Walsh, Fortier, & DiLillo, 2010) and the burgeoning resilience literature (Luthar, *in press*; Masten & Wright, 2009). However, our focus will be restricted to those studies that focus on more general coping and self-regulation processes. Thus, we will briefly discuss the similarities and differences between *regulation* (which figures prominently in the child development literature) and *coping* (studied extensively in both the child and the adult development literatures), and then the importance of our three themes for understanding the development of coping and regulation across the life span.

■ OVERLAP AND DIFFERENCES BETWEEN REGULATION AND COPING

The child development literature often focuses on regulation, which in general, refers to how children learn to guide, modulate, or manage their own behavior, emotion, or attention, when dominant responses do not serve. Early work on regulation examined behavioral self-regulation, defined as “learning to wait before acting, self-monitoring, and acquiring the ability to organize segments of behavior sequentially” (National Research Council, 2000, p. 103). Current work on behavioral regulation focuses on both “don’t regulation” or inhibiting a dominant response (e.g., delay of gratification; Metcalfe & Mischel, 1999) and “do regulation” or compliance with requests for nondominant responses (Kochanska, Coy, & Murray, 2005; for a review, see McClelland, Ponitz, Messersmith, & Tominey, *in press*). Behavioral regulation can be contrasted with emotion regulation, defined as “initiating, maintaining, modulating, or changing the occurrence, intensity, or duration of internal

feeling states and emotion-related physiological processes, often in the service of accomplishing one's goals" (Eisenberg & Zhou, 2000, p. 167). Most recently, research has focused on the regulation of attention, including its temperamental and neurological basis (Rueda & Rothbart, 2009). The literatures on all forms of regulation have burgeoned and, although they represent largely distinct lines of work, all have as a common theme the important role that the intentional initiation and inhibition of action components (i.e., behavior, emotion, and attention) play in adaptation to environmental demands.

In contrast, adult developmentalists who study adaptation have focused more on the role of coping. While there are several competing definitions of coping, we have chosen to focus on coping *processes*, or behaviors and cognitions that individuals use to cope with particular stressful episodes. Coping processes include efforts to both manage the problem and the attendant negative emotions. Personal goals, beliefs, and characteristics, as well as the environmental context, influence the use of coping strategies. Coping is multidimensional and flexible in that individuals tailor their multiple efforts to fit the demands of particular situations, and recursive, in that they observe the outcomes of their actions, judge whether or not they are achieving their goals in the situation, and modify their strategies accordingly. When coping is viewed from this perspective, its overlap with processes of self-regulation becomes more apparent.

Some of the biggest strides in integrating conceptualizations of coping and regulation have been made in the study of the development of coping during childhood and adolescence. From this perspective, coping can actually be defined as "regulation under stress" (Compas, O'Connor-Smith, Saltzman, Thomsen, Wadsworth, 2001; Eisenberg, Fabes, & Guthrie, 1997; Skinner, 1999; Skinner & Zimmer-Gembeck, 2007, 2009). Coping describes how people mobilize, modulate, manage, and coordinate multiple aspects of the self under stress (or fail to do so). In contrast to most work on regulation, which focuses on efforts to manage a specific feature (e.g., *emotion* regulation or *attention* regulation), coping is an organizational construct and involves the regulation of all the aspects of self that are influenced by stress, including physiology, emotion, behavior, cognition, motivation, and attention, as well as attempts to influence the environment, including the actions, thoughts, and emotions of others, in dealing with stressful situations, whether actual or anticipated (Aspinwall & Taylor, 1997). Understanding how coping develops can be informed by studying not only the development of action regulation in all its facets (attentional, behavioral, emotional, etc.), but also how they are coordinated with each other over the course of a coping episode, and how they become more integrated over development.

Thus, there is much overlap between work on self-regulation and coping, and the goal of this chapter is to explicitly explore overlap as a means to advance our understanding of both. We identified three aspects of coping and self-regulation, which have particularly interesting differences in their conceptions in the child and adult developmental literatures, including issues of control versus accommodation, the social embeddedness of coping, and processes of energy regulation. Each of these issues will be addressed in the following sections. They can be seen as part of a general movement in the field to go beyond traditional conceptualizations of coping that focus almost exclusively on interindividual differences and that privilege solo efforts aimed at bringing the environment in line with one's wishes through effort

and determination. We are attempting to move toward a consideration of coping as encompassing a profile of adaptive processes, including accommodation, enacted as parts of dyads and social groups, which are malleable over the short-run, and have the potential to develop over the long term.

■ PRIMARY CONTROL, SECONDARY CONTROL, AND ACCOMMODATION

For more than 25 years, the constructs of *primary* and *secondary control* have captured the imagination of researchers studying coping and regulation (Heckhausen & Schulz, 1995; Morling & Evered, 2006). When the ideas were first introduced by Rothbaum, Weisz, and Snyder (1982), the field was dominated by theories of perceived control, as conveyed in concepts like locus of control, learned helplessness, self-efficacy, and causal attributions. Rothbaum et al. bundled these constructs together into “primary control,” which focuses on effecting changes in the external environment, and “relinquished control,” which focuses on helplessness, and then contrasted them with “secondary control.”

Over time, however, two different conceptualizations of “secondary control” have evolved (Morling & Evered, 2006). “Control-focused” definitions posit that secondary control “targets the self and attempts to achieve changes directly within the individual” (Heckhausen & Schulz, 1995, p. 285). According to this perspective, secondary control is “secondary” in two ways: It is less adaptive than primary control, and it is also secondary in a temporal sense, in that it is employed only after attempts at primary control have been exhausted.

In contrast, “fit-focused” definitions of secondary control highlight “fitting in” and “going with the flow.” This set of adaptive processes de-emphasizes attempts to change or influence anything (self or world), but instead refers to adjusting the preferences of the self to fit with current conditions in the world. From this perspective, processes of fit are not secondary to primary control strategies; they represent an alternative equally important set of adaptive processes. Since “fit-focused” constructs do not reflect control and are not secondary, it has been suggested that they should no longer be referred to as “secondary control” (Morling & Evered, 2006; Skinner, 2007). Instead, terms like “accommodation” or “fit” have been suggested (Brandtstädter & Renner, 1990).

Primary control, relinquishment of control, secondary control, and accommodation have all been used to describe coping resources, coping strategies, and forms of regulation. However, different facets have been emphasized at different ages, and child versus adult developmentalists have come to markedly different conclusions about their relative importance and functioning. The critique and integration of work from different developmental periods may provide a clearer and more comprehensive perspective on the roles of control and accommodation in stress, coping, and resilience across the life span.

Primary Control

The role of primary control in coping is relatively well understood; it has been the target of multiple theories and decades of research (Elliot & Dweck, 2005; Skinner, 1996). Having a sense of control and feeling efficacious shape the coping process

(Dweck, 1999; Folkman, 1984). Individuals who have high levels of self-efficacy tend to appraise stressful events as challenges and they cope constructively. Regulation is action-oriented and focused on generating strategies, exerting effort, and using outcomes (even failures) as information to shape subsequent strategies. This pattern of regulation and coping is more likely to actually solve problems, and when problems are not solvable, to nevertheless lead to gains in knowledge and skills. Such episodes contribute to increases in actual competence and to decreases in the probability of future stressful encounters, which in the long run, reinforce a sense of control (e.g., Schmitz & Skinner, 1993).

Processes of "relinquishment of control," or helplessness, have also been studied closely (Peterson, Maier, & Seligman, 1993). Individuals who feel incompetent or that desired outcomes are based on causes they cannot influence (like powerful others, chance, luck, or fate) are particularly vulnerable to encounters with setbacks or failure. Their regulation loses focus, with energy and concentration sapped by self-doubt and worry; as a result, they lose access to their own best skills (Dweck, 1999). Coping includes passivity, confusion, escape, and help avoidance. This pattern of coping and regulation interferes with effectiveness, sidetracking the development of actual competencies, and making future stressors more likely. Cumulatively, these experiences can further cement feelings of helplessness (e.g., Nolen-Hoeksema, Girgus, & Seligman, 1986).

Development of Primary Control

The bulk of the work in this area examines individual differences. However, small strands of research examine the development of perceived control (e.g., Flammer, 1995; Skinner, 1995; Skinner, Zimmer-Gembeck, & Connell, 1998). Perceived control (the sense of personal force or that "I can do it") seems to be helpful in dealing with stress, beginning in infancy, when it blunts the physiological consequences of painful events (Amat, Paul, Zarza, Watkins, & Maier, 2007), all the way to old age, when it bolsters life satisfaction and well-being (Lachman & Prenda-Firth, 2004; Skaff, 2007).

Some of the benefits of control are conferred through the kinds of coping they shape. However, the actual ways of coping that are promoted by a sense of control change significantly with age. Some examples can illustrate the general idea. In earliest infancy, expectations of control prompt increases in exertion and efforts to reproduce desired events (Papousek & Papousek, 1980). For toddlers, control expectations may also lead to repeated requests to caregivers to produce desired outcomes (Heckhausen, 1982). During preschool age, children try out a variety of concrete actions when they expect control (Heckhausen, 1984). In middle childhood, this behavioral problem-solving gives way to cognitive problem-solving and consultation with adults to guide active attempts (Dweck, 1999). Adolescence may bring planning into the action repertoire, and later preventative action and proactive avoidance of problems (Aspinwall & Taylor, 1997; Zimmer-Gembeck & Skinner, 2008). Adulthood contains a wide variety of primary control strategies, which include effort exertion, problem-solving, and information seeking, which are among the most common strategies of coping (Skinner, Edge, Altman, & Sherwood, 2003).

At the same time, developmental differences mark how control experiences are interpreted and translated into future expectancies (Flammer, 1995; Skinner, 1995).

For example, by age 2, children usually want to “do it myself!” for a success to “count” toward a feeling of efficacy (Heckhausen, 1984). During the elementary school years, children begin to understand that efforts are not enough for feelings of competence; one also needs to reach a certain standard of performance (Stipek & McIver, 1989). By late childhood, the level of performance is compared to peers, with self-evaluations potentially declining (Ruble, 1983). Beginning in early adolescence with the differentiation of effort and ability, feelings of competence require success on normatively difficult tasks (Nicholls, 1978). Throughout the life span, efforts to protect a sense of control while these developments unfold may lead to coping strategies that have maladaptive consequences, such as refusing to try hard or devaluing domains in which control is difficult to exert (e.g., Covington & Omelich, 1979).

Secondary Control

Control-focused definitions of secondary control draw attention to control efforts aimed, not at the context, but at the self. When dealing with stressful events, individuals want not only to change external events (primary control) but also to regulate facets of the self that might aid in achieving primary control. The function of these secondary control efforts is “to minimize losses in, maintain, and expand existing levels of primary control” (Heckhausen & Schulz, 1995, p. 284). Although theorists have not carefully distinguished between *beliefs* and *strategies* of secondary control, it is reasonable to assume that (following primary control distinctions) secondary control *beliefs* involve feelings of efficacy in deploying and modifying aspects of the self needed to exert primary control, such as behavior, volition, and motivation. A sense of secondary control entails confidence and optimism about being able to “get myself” to do what is needed to produce desired and prevent undesired outcomes. The opposite would likely be a sense of helplessness with respect to “getting myself” to do what is required. If so, then these beliefs reflect a sense of self-regulatory or coping efficacy.

In contrast, secondary control *strategies* typically refer to actions, most of which have been studied as ways of coping and forms of self-regulation. Some of these actions can be considered “back-up” strategies, used after initial attempts have failed (Thompson et al., 1998). For example, people can increase the attractiveness of the blocked goal, shift resources from other activities to the implementation of the blocked goal, narrow focus toward the goal, and construct new strategies or means; strategies may also include changing the self by developing new competencies or accessing the resources of others through “proxy” control (Bandura, 1997; Brandtstädter & Renner, 1990; Heckhausen & Schulz, 1995).

Other secondary control strategies refer to means of suspending current efforts without giving up on the goal. For example, people can attempt to create alternative “secondary” routes, through information search, consultation, and other attempts to find out more about possible contingencies. They could also employ mental activities such as extending deadlines, waiting for the right moment, or bolstering optimism (e.g., Brim, 1992). These strategies involve continued commitment to the goal, combined with a focus on action readiness and monitoring conditions for when they are likely to be favorable for control efforts (Brandtstädter & Rothermund, 2002).

Another kind of secondary control strategy come into play when it is no longer possible to “fix” the chosen target, such as when dealing with an irrevocable loss or

an inevitable negative outcome: People can shift their goals toward outcomes they can more feasibly control. For example, in the case of a terminal illness, people can shift their focus from finding a cure to influencing the symptoms, course, or treatment of the illness, and its effects on others (Thompson, Sobolew-Shubin, Galbraith, Schwankovsky, & Cruzen, 1993). Also referred to as "consequence-related control" (Thompson, Nanni, & Levine, 1994), this includes turning efforts toward the self, attempting to influence one's own emotions or reactions; many of these activities are also studied as emotion regulation (Gross, 1998). These secondary control strategies, as well as confidence in one's capacity to enact them (i.e., secondary control beliefs or coping self-efficacy), are directly related to increasing the probability that future attempts to exert control will be successful. Hence, they produce many of the same benefits as primary control, and serve to create control experiences even in "low control" circumstances.

Development of Secondary Control

Because of the confusion surrounding the construct of secondary control (Morling & Evered, 2006), very little research has targeted its development. The most focused set of studies examines the level and functions of different kinds of secondary control across the adult life span (Schulz, Wrosch, & Heckhausen, 2003). These researchers suggested that declining levels of direct primary control (based on developmental losses, societal constraints, and previous life choices) normatively result in the increasing use and benefits of compensatory strategies (e.g., help-seeking) and secondary control strategies.

It seems clear that the study of the development of "secondary control" would benefit from exploiting the almost complete overlap between these concepts and work on coping self-efficacy and the development of self-regulation. Because secondary control encompasses individuals' attempts to target the self as an object of change, by definition secondary control refers to self-regulation. If secondary control is activated when primary control efforts fail, then secondary control by definition refers to coping (Folkman, 1984). This suggests that research on the development of behavioral and emotional self-regulation during infancy, childhood, and adolescence could provide a map to the development of secondary control.

For example, research relevant to secondary control can be found in the study of self-regulated learning during childhood and adolescence, which targets the use of adaptive help-seeking (Newman, 2000) and other strategies students employ to organize and guide their behavior so that they can learn effectively (Zimmerman & Schunk, 2001). The capacity for self-regulated learning is considered to emerge in middle childhood when the development of metacognitive capacities and executive functions allow children to intentionally deploy behaviors, such as practice, studying, note-taking, and homework planning, in ways that contribute to future achievement outcomes (e.g., Paris & Newman, 1990). Many of the strategies studied in self-regulated learning are also considered ways of coping (Eisenberg, Valiente, & Sulik, 2009).

Work on the development of emotion-focused coping may be particularly relevant to the study of secondary control strategies. The emergence of intentional emotion-focused coping during toddlerhood can be traced to neurological developments accompanied by supportive social interactions between parent and child in

stressful situations (Kopp, 2009). Between the ages of 6 and 9, there is a dramatic increase in emotion-focused coping (Compas, Worsham, & Ey, 1992). Children develop the ability to verbalize and differentiate their feelings, are also more differentiated in the type of emotion-focus strategies they use, and thus are better able to self-regulate. In middle childhood, the development of language and symbolic reasoning allows the child to develop more cognitively oriented problem- and emotion-focused coping (Compas et al., 2001), and they are better able to judge the controllability of the environment and tailor their coping strategies accordingly. They may also become more adept at inhibiting actions (Losoya, Eisenberg, & Fabes, 1998). Taken together, these developments should facilitate improved secondary control coping.

Fit-focused Accommodative Processes

One of the most exciting ideas to emerge from discussions of primary and secondary control is that “control” is not the only adaptive process important to dealing with stress. In addition to changing the world to achieve the goals of the self (as in primary control), it is often adaptive to flexibly adjust goals to accommodate current options, priorities, resources, and constraints. These accommodative processes have been at the core of fit-focused definitions of secondary control (Morling & Evered, 2006). They were originally called secondary control because it was assumed that they came into play only when primary control efforts failed. However, since that time, many theorists have argued that “going with the flow” can be a preferred mode of adaptation, employed as a first step when stress is encountered. Attempts to “fit in,” “roll with the punches,” or “bend” in the face of adversity can be used as primary coping strategies any time that attempts to change the world would be inappropriate, upset relationships, consume too many resources, or threaten other goals that are more important.

Although no comprehensive list of accommodative processes has been compiled, in general, they involve processes that allow people to dissolve commitments to previously important goals and find satisfaction in the current state of affairs (Brandtstädter & Rothermund, 2002). The aim is to recruit genuine acceptance, gracious acquiescence, or willing assent, and not just a state of resignation or grudging compliance (Skinner, 2007). Examples of such strategies include downward social comparison, sour grapes, distraction, and focus on the positive (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Other researchers have suggested that these processes can be boosted through deference, taking the larger perspective, listening to others, empathy, compassion, gratitude, humility, trust, self-discipline, and willpower (Greve & Strobl, 2004).

In early models of assimilation (primary control) and accommodation, researchers argued that primary control and accommodation were *not* opposites, but instead were two complementary processes of adaptation (Brandtstädter & Renner, 1990). Primary control referred to “tenacious goal pursuit” and its opposite was helplessness. In contrast, accommodation referred to flexible goal adjustment, and its opposite was “rigid perseveration.” Psychometric analyses have confirmed this hypothesized structure, revealing two distinguishable bipolar dimensions that are positively related to each other (Brandtstädter & Renner, 1990). Subsequent research on fit-focused constructs has also shown that they are positively related to primary control (Morling & Evered, 2006).

As the opposite of accommodation, rigid perseveration involves inflexible fixation on a specific goal no matter what the costs to self or others. Some processes that may contribute to perseveration are making unattainable goals more attractive, dwelling on losses and “might-have-beens,” upward social comparison or envy, and stubborn insistence about the feasibility of an unattainable goal. The way of coping within this family that has been studied the most closely is rumination, which refers to involuntary engagement with the distressing features of negative life events (e.g., Connor-Smith et al., 2000; Nolen-Hoeksma, Wisco, & Lyubomirsky, 2008). Such perseveration invokes and amplifies negative mood as well as capturing attention and occupying working memory capacity, thus interfering with constructive problem-solving and priority setting (Nolen-Hoeksma et al., 2008).

The capacity to accommodate or “let go,” that is, to disengage from previously held goals or activities, seems particularly important when dealing with extremely stressful events (such as traumatic loss) or serious normative losses, such as in very old age. In accounts of accommodative processes, some researchers assert that these processes operate outside of conscious awareness and cannot be intentionally deployed (Brandtstädter & Rothermund, 2002). However, accommodative ways of coping, such as distraction, focus on the positive, and cognitive reappraisal, are included in coping interventions designed for children, youth, and adults, suggesting that at least some of them can be taught and acquired.

Development of Accommodation

Although consideration of accommodation and its benefits appear most frequently in discussions about cultural differences in control preferences and the challenges of successful aging, accommodative processes also play a big role in the lives of young children. The capacity for “committed compliance” is considered the desired end-state for the development of self-regulation in early childhood (Kochanska, 2002). Willing compliance involves easily going along with the requests and demands of adults as well as with standard rules and routines. The normative development of these early forms of accommodation is based in temperamental factors and requires the emergence of cognitive and linguistic skills within a supportive set of social relationships (Kochanska, Aksan, & Carlson, 2005). Compared to discussions about adulthood and aging, which debate the merits of accommodation (e.g., Gould, 1999; Heckhausen & Schulz, 1995), discussions about childhood clearly recognize that the capacity to defer one’s current impulses and desires in service of larger goals is a critical capacity to develop and one that underlies effective coping (Bronson, 2000).

■ SOCIAL EMBEDDEDNESS OF COPING AND SELF-REGULATION

Early models of coping focused on individual attempts to deal with stress—sometimes referred to as “heroic” effort models (Dunahoo, Hobfoll, Monnier, Hulsizer, & Johnson, 1998). However, there is a growing recognition that coping efforts are inextricably embedded in social relationships and higher-order social contexts of demands, resources, supports, and hindrances (Cutrona & Gardner, 2006; Revenson & Pranikoff, 2005). Historically, research on adulthood has tended to acknowledge the social nature of coping by focusing on social support—how family and friends in

informal social support networks assist individuals with their problems. More recent programs of research have expanded this conception to the realization that problems generally affect more than one person, and have started explicitly examining “dyadic coping” that involves how couples (and other dyads) seek to deal with problems that affect them jointly (Berg, personal communication, March, 2009).

Research on coping during childhood has traditionally considered the social dimension as part of the “socialization” of emotion and coping by parents. More recently, developmental analyses have revealed that self-reliant coping emerges from social interactions with more competent partners, and looks at support-seeking as a strategy that becomes more differentiated and selective across childhood and adolescence. In recent reviews of the development of coping, support-seeking has emerged as an “all-purpose” coping strategy, commonly called upon to deal with all kinds of stressors from childhood to old age (Aldwin, 2007; Skinner & Zimmer-Gembeck, 2007).

People assist each other with coping and regulation in multiple ways, such as giving direct assistance, giving advice, providing protection against stress, soothing emotional reactions, creating an environment that makes coping easier, or modeling new appraisal and coping strategies (e.g., Thoits, 1986). Different areas of study tend to focus on only one of these processes within one age group, and sometimes limit their focus to a particular stressor (e.g., divorce, illness, or conflict). Other researchers attend to the broader social context or to particular people (e.g., Tolan & Grant, 2009).

Nevertheless, all these lines of work make clear the critical importance of social partners, relationships, families, and social contexts. In general, coping and regulation benefit from relationships that are warm, responsive, and autonomy supportive, families who are cohesive, communicative, structured, and consistent, and contexts that are challenging but not chronically overwhelming. Unsupportive social relationships and contexts are ones that are neglectful, dismissive, coercive, controlling, overbearing, intrusive, inconsistent, or otherwise not attuned to the needs of the person doing the coping. These social coping resources and liabilities seem to exert an impact on all phases of the stress and coping process, including threat appraisals, distress reactions, ways of coping, experiences of coping efficacy, and recovery from setbacks.

As mentioned earlier, researchers interested in the social embeddedness of coping have turned their attention to the “particular ways that couples potentially interact as they deal with stressors” (Berg & Upchurch, 2007, p. 920). Compared to other studies of social resources for coping, such studies of dyadic coping (Berg & Upchurch, 2007; Bodenmann, Pihet, & Kayser, 2006) seek to more explicitly examine the strategies used by each member of a dyad, and draw attention to how stressors can impact upon one or both members, as well as their extended social networks. One critical task has been to examine how congruence or balance between the coping beliefs and strategies of two members in a close dyad might have implications for mental health and other outcomes.

Another task has been to more directly examine coping at the dyadic level rather than considering each individual and their differences or similarities. New terminology emerges from this literature such as collective coping congruence, collective ineffective coping (Berg & Upchurch, 2007), and supportive, common, delegated, hostile, ambivalent, or superficial dyadic coping (Bodenmann et al., 2006). This

terminology has been used primarily in research on married couples coping with health problems (Berg & Upchurch, 2007), with some exceptions (e.g., Bodenmann et al., 2006), but the notion of dyadic coping has implications for identifying the social processes involved in stress and coping for other stressors and during all life stages.

Infancy, Toddlerhood, and Childhood

Caregivers, especially sensitive and responsive ones, are an integral part of infants' reactions to stress, influencing not just how they respond but whether they even experience an event as physiologically stressful (Gunnar & Quevedo, 2007). In fact, during infancy, caregivers carry out many of the responses that typically qualify as "coping" (Holodynski & Friedlmeier, 2006; Sroufe, 1996). Lewis and Ramsay (1999) proposed four primary ways the environment can assist infants to manage stress. Other people can: (1) protect against stress; (2) soothe reactions to stressors; (3) promote individual resources such as self-competence and well-being that aid coping and promote resilience; and (4) promote positive mental representations of others and the self that can assist in times of stress (see Berg & Upchurch, 2007; Kliewer et al., 2006 for similar descriptions of the roles of the social context in coping). Even children as young as 15–18 months of age can have complex cognitive representations and schemas (Lewis & Ramsay, 1999; Stipek, Galinski, & Kopp, 1990).

A primary task of parents of young children is to respond sensitively and appropriately to their distress. Although evidence is mixed about whether parents' attempts at soothing infant distress can change stress reactivity in the short term (e.g., reduce future bouts of crying or cortisol responses; e.g., Lewis & Ramsay, 1999), a few studies have shown that sensitive responsiveness can lead to reduced physiological responding to normative stressors (such as inoculations) over a period of months, especially for infants with difficult temperaments (Gunnar & Quevedo, 2007). At the same time, it is clear that temperament itself plays a significant role in the emotional displays, coping, and regulation of infants and young children (Compas et al., 2001; Fox & Calkins, 2003; Lewis & Ramsay, 1999; Rueda & Rothbart, 2009), as do aspects of attention and attention regulation (Kopp, 2002).

Beginning in the middle of the first year of life, children often rely on their parents for direct assistance with coping and regulation (Grolnick, Bridges, & Connell, 1996; Holodynski & Friedlmeier, 2006), and as social references for how to respond to novel and potentially distressing situations (Diamond & Aspinwall, 2003). Between 6 and 18 months of age children become increasingly likely to engage in other directed regulatory behavior (Gianino & Tronick, 1998) by directly seeking the aid of caregivers to help them regulate their own responses to stressful events (Braungart-Rieker & Stifter, 1996). According to Barrett and Campos (1991), early in the second half of the first year infants develop the ability to direct their facial responses in ways that elicit support or direct the instrumental actions of others, and parents or others respond in a coregulatory pattern. Other adaptive strategies for support-seeking and assistance with regulation also emerge around this time, such as seeking eye contact with caregivers when soothing or other forms of assistance are desired.

The importance of toddler signals and caregivers' responses in early interactions is illustrated in the research on attachment, stress, and regulation. The emotional sensitivity of the caregiver to children's distress, including soothing and coping assistance, are used as markers of the attachment status of the parent-child relationship,

reflecting the history of parental responsiveness and child security. Hence, many studies of infant or toddler attachment have focused on the child's response to parental soothing upon reunion after a stressor. Because secure attachments have been associated with dampened stress cortisol (i.e., stress reactivity) among toddlers (Gunnar & Quevedo, 2007), parents' responses to infant distress are considered an important part of a child's coping resources and as parents' "social regulation" of young children (Gunnar & Vasquez, 2006, p. 533). Others have referred to this process as "coregulation," which is believed to be a necessary precursor of the development of children's own self-regulation (Mikulincer, Shaver, & Horesch, 2006).

Early harsh family environments often deplete parental capacities to soothe, protect, and promote resources and positive cognitive representations. Environments, such as those without sufficient financial resources or that involve high conflict or maltreatment of children, have been linked to poor coping and regulatory behaviors in young children both concurrently and over time (Cicchetti & Rogosch, 2009; Propper & Moore, 2006). Such environments may have greater impact on some children than others. Harsh parenting or low resource environments seem to interact with children's genetic risk (Propper & Moore, 2006) and their temperamental emotionality (Propper & Moore, 2006; Valiente, Fabes, Eisenberg, & Spinrad, 2004) to reduce vulnerable children's capacities for regulation and constructive coping even further.

Early Childhood to Adolescence

In the toddler and early childhood years, children begin to be able to reliably control their own coping behavior voluntarily (Bronson, 2000; Kopp, 2009), and cognition, social relations, emotion, and self-understanding increase in capacity and integration (Sameroff & Haith, 1996). High-quality parenting is essential for these accumulated foundations and parents continue to be resources for coping and regulation under stress (Fabes, Leonard, Kupanoff, & Martin, 2001; Newman, 2000; Valiente et al., 2004). Other individuals such as teachers, peers, and siblings can take on important roles in these processes (Seiffge-Krenke, 1995; Zimmer-Gembeck & Locke, 2007).

An important task for more knowledgeable and experienced social partners has been referred to as the "coping socialization" of children and adolescents (Kliewer et al., 2006). Socialization has been defined as "an adult-initiated process by which young persons, through education, training, and imitation, acquire their culture and their habits and values congruent with adaptation to that culture" (Baumrind, 1996, p. 408). Similar perspectives can be found in studies of emotional socialization, which focus on parental expressivity and emotion coaching (Cole, Teti, & Zahn-Waxler, 2003; Valiente et al., 2004).

As part of the socialization process, adult caregivers can scaffold how children manage their emotional arousal and coping responses via direct instruction, coaching, and modeling of coping behaviors, as well as by filtering the specific events to which children are exposed (Kliewer et al., 2006; Power, 2004). Research has examined associations between coping used by parents and their children's ways of coping in response to chronic medical conditions (Kliewer & Lewis, 1995), acute stressors (Koplik, Lamping, & Reznikoff, 1992) and everyday problems (Kliewer, Fearnow, & Miller, 1996). Although findings are not always consistent, parental coping behaviors seem to be at least moderately related to children's coping, with overt parental coping

responses likely being the most readily modeled by children. Evidence suggests that children's use of avoidant coping is positively associated with maternal expression of emotion, maternal disengagement and denial, and negatively associated with maternal use of cognitive restructuring (Kliewer et al., 1996). Further, parents who actively cope with their own stressors, for example, by reframing situations to focus on the positive and using social support, tend to have children who are more likely to approach rather than avoid dealing with problems.

By adolescence and into adulthood, coping is an organized pattern of responding using both self-reliance and social resources. Adolescents and adults employ a wider range of coping strategies than children, and it is this increasing flexibility and organization of their responses that is likely to be most adaptive (Zimmer-Gembeck & Skinner, 2008). New close relationships form and can be new bases of security for tackling life's challenges (Feeney, 2004) and provide helpful collaborators (Berg et al., 2007; Gagnon & Dixon, 2008). Such close intimate relationships are supportive and satisfying partly because they are buffers, supports, helpers, protectors, and places of security and safety in times of difficulty. These are the experiences that make up what is often referred to as intimacy, commitment, and reliable alliance, and are some of the key elements of good quality relationships (Berscheid, Snyder, & Omoto, 1989).

Dyadic Coping in Adult Couples

There is a growing literature on dyadic coping with stress in adulthood, although much of what is known comes from studies of middle-aged and older adult couples coping with health problems (Berg & Upchurch, 2007). Theory and research on dyadic coping acknowledges that an integral part of close relationships is *joint* coping with the same objectively stressful event, in which each member of the dyad not only engages in the process of coping with stress, but also perceives and interprets the behaviors of the other (Berg & Upchurch, 2007). For example, one member may believe that the other is supportive either emotionally or instrumentally, collaborative, controlling, or uninvolved (Berg, Meegan, & Deviney, 1998; Bodenmann et al., 2006; Coyne & Smith, 1991).

When both members of the dyad are considered, there can be a match or mismatch in perceptions, appraisals, and coping responses, and the collective pattern or joint perception may be more important than either person's particular appraisals or ways of coping independently. For example, a collective dyadic pattern of ineffective coping may be more detrimental to stress reduction and future functioning than a couple with one partner who compensates for the other's intermittent or persistent ineffective responses. Moreover, the overall adaptive dyadic pattern of coping has been more strongly associated with positive adjustment than congruence in coping between partners (Revenson, 2003), unless that congruence indicates mutual collaboration (Badr, 2004; see also Gagnon & Dixon, 2008, for a study on the benefits of collaborative cognition).

A recent model of dyadic coping highlights the temporal patterning of coping within each partner and between partners, and acknowledges the influence of individual factors (e.g., cognitive functioning), the stressor (e.g., type of medical condition), the broader sociocultural context (e.g., gender and race/ethnicity), other features of the relationship (e.g., marital quality), and the interactions between all

of these elements (e.g., different cultural groups have different prevalence of illness; Berg & Upchurch, 2007). Despite these complexities, some tentative conclusions about dyadic coping can be made. First, threat appraisals can be examined as dyadic or group level phenomena (Hobfoll, 1998). In fact, studies indicate that, compared to individual stress appraisals, stress appraisals at the dyadic level may be more relevant to understanding coping responses as well as health and relationship outcomes (Figueiras & Weinman, 2003; Heijmans, de Ridder, & Bensing, 1999).

Second, dyadic coping seems to serve both a stress-coping function and a relationship function (Bodenmann, 2005). Regarding the stress-coping function, lower distress and better individual health have been found to be associated with constructive dyadic coping, such as support provision, stress communication, supportive coping (e.g., direct assistance, advice, help with cognitive reframing when one dyad member is most affected by the stressor), and common dyadic coping (e.g., joint problem-solving, information sharing, discussing feelings, relaxing together; Badr, 2004; Coyne & Smith, 1991; Cutrona & Gardner, 2006). [Bodenmann](#) (1995) also found that negative dyadic coping, in which support is provided unwillingly, superficially, or with hostility, adds to distress and problems. AQ 1

Although it is challenging methodologically to disentangle dyadic coping from assessments of marital satisfaction or other relationship qualities, there is also evidence that dyadic coping serves a relationship function. It is a significant correlate of relationship qualities such as conflict, quarreling, intimacy, tenderness, and togetherness; such associations have been found concurrently (Bodenmann, 2005; Wright & Aquilino, 1998) and longitudinally (see Cutrona & Gardner, 2006 for a review). For example, in a study of 90 married Swiss couples assessed ~~more than four waves of data~~, Bodenmann et al. (2006) found that partners who reported more positive and less negative dyadic coping had higher concurrent marital quality assessed as not quarreling, tenderness, and togetherness over a 2-year period. In this study, dyadic coping, whether positive or negative, at one time point was *not* associated with later marital quality. However, Bodenmann and Cina (1999; cited in Cutrona & Gardner, 2006) reported a longitudinal association between positive dyadic coping and subsequent relationship quality, suggesting that further research on the effects of dyadic coping on marital quality is warranted.

Aging and Later Life

As suggested previously, dyadic coping does not occur in isolation from a range of individual and contextual factors, such as the typical behaviors, temperament, and coping histories of each partner; the type of stressor and the characteristics of the stressor such as level of threat, perceived controllability, chronicity, and novelty; relationship history; and the sociocultural context (Berg & Upchurch, 2007; Cutrona & Gardner, 2006). Of all of these, length of relationship and age may be particularly and directly important to dyadic coping. Long-term relationships are often of higher quality and more satisfying, so may have better foundations for dyadic coping (Berg & Upchurch, 2007; Carstensen, Gottman, & Levenson, 1995) and collaboration (Dixon, 1999).

Although often confounded with relationship length, age may also be important. Young couples may not have the same histories of stress experience and coping, and they may be experiencing a significant stressor together for the first time. This may

cause more distress and challenges to the coping and regulation of each member and for dyadic coping (Revenson, 2003; Revenson & Prankoff, 2005). With experience and age, a division of coping strategies may occur, such that younger couples have been found to be more congruent in their coping, whereas among older couples, coping is more complementary.

Overall, with age and as relationships progress, individual members become more accustomed to dyadic stressors and more familiar with partners' reactions and needs. As described by Dixon (1999) in his work on collaborative cognition, older couples and those in longer term relationships are better at communicating and at pooling their resources to compensate for individual deficits when faced with demanding cognitive-based tasks. Research has shown that using collaboration allows older married couples to perform better on challenging cognitive tasks when compared to other same-aged pairs; older married couples also performed as well as younger couples (Dixon & Gould, 1998). However, as Cutrona and Gardner (2006) eloquently described, some failures at dyadic coping are normal for everyone when stress is high and resources fall short. Most interesting to consider is how others can provide mismatched responses even when trying their best. Miller, Green, and Bales (1999) give compelling examples of parents' responses to children's impending medical procedures that may be intuitively appealing and easily enacted, but may not have the best short- or long-term outcomes for children. "Our goal should not be 'perfect dyadic coping' but multiple opportunities for redemption" (Cutrona & Gardner, 2006, p. 513).

In late life, coping and regulation can be challenged by new and significant stressors, as well as by changes to dyadic coping resources. Although there are many stressors that are more prevalent in older than younger persons (e.g., medical problems), the loss of a partner is one of the most significant stressful life events associated with getting older. Not only does it come with emotional distress, but also widowhood usually is accompanied by losses of important coping resources that are not easily replaced (Ha, Carr, Utz, & Nesse, 2006). Although couple relationships may be the most important coping resources for many people, particularly males (Gurung, Taylor, & Seeman, 2003), many individuals rely on parents and friends for large portions of their lives. This is partly due to the high incidence of divorce and relationship breakdown, the extended age period without marrying or making a life-long commitment to a partner, and the high number of older persons who are living without a spouse or a partner.

Although no research has yet addressed the topic of the development of dyadic coping processes in other relationships after the death of a spouse or long-term partner, one of the adaptations to widowhood is the increasing flow of support from child to the widowed parent, particularly for women with less education (Ha et al., 2006). Research also shows that social networks may decline in size with increasing age, but the availability of social support does not (Gurung et al., 2003). For many people who are dealing with significant life transitions, new sources of support do seem to fill the gap (Gurung et al., 2003), but it is quite likely that the development of new dyadic coping resources is an adaptive process that does not occur quickly or easily.

There is evidence in the adult literature that the impact of social support (and its disruption) may change with age, but the evidence is not always consistent. In general, studies have found that social support has a stronger impact in late life (Knoll & Schwarzer, 2002). For example, Adams and Jackson (2000) found that the effects of

contact with friends and family had a stronger effect on subjective well-being for the older participants than for younger or middle-aged participants. In contrast, however, bereavement may have greater effects on morbidity and mortality in midlife than in late life, even controlling for spousal similarities in health behavior habits (Johnson, Backlund, Sorlie, & Loveless, 2000).

There are also likely to be *negative* effects of social support, including in late life (Rook, Mavandadi, Sorkin, & Zettel, 2007). For example, providing large amounts of social support to chronically ill individuals can result in greater manifestations of disability (Seeman, Bruce, & McAvay, 1996) and may contribute to disability onset and progression, especially in older adults (Mendes de Leon, Gold, Glass, Kaplan, & George, 2001) and older men (Avlund, Lund, Holstein, & Due, 2004). Over-protection may threaten feelings of autonomy and independence and erode confidence in one's own ability to provide self-care (Coyne, Wortman, & Lehman, 1988). This finding is particularly true for instrumental support (Newsom, 1999). In general, emotional support from adult children is associated with higher levels of social well-being in later life, but provision of information, especially if unsolicited, can have weaker and/or negative effects. However, these findings may vary by type of health outcome and disease progression. For example, Zautra and Manne (1992) found that over-protectiveness by husbands in earlier stages of their wives' rheumatoid arthritis led to increased distress, but to more positive outcomes at later stages. Baltes (1996) has argued strongly that over-protective support greatly diminishes the quality of life for older adults.

Nonetheless, the positive aspects of social support in general outweigh the negative. Complementary social support allows older couples to compensate for individual deficits, whether physical or cognitive, and may allow them to better manage the resources they do have. As we shall see, energy management, ~~if neglected~~, is an important adaptive strategy throughout the life span, but may be particularly important in late life. AQ 2

■ ENERGY MANAGEMENT ACROSS THE LIFE SPAN

Ecological biologists study the biomechanics of movement with an eye toward understanding the relationship between energy expended and energy gained. For example, if a leopard or other hunter expends more caloric energy in catching prey than it takes in, over the long term, the animal is not likely to survive. More experienced hunters expend the minimum amount of energy necessary to catch their prey and thus are more successful. In modern humans, the direct relationship between energy expended and calories consumed is less relevant to understanding the process of adaptation (except vis-à-vis obesity). However, the issue of relative efficiency in coping with stress is potentially an important issue, one that has not received much scientific attention. There have been discussions of coping effort, which is generally operationalized simply as the total number of coping strategies used, as well as their frequency or intensity of use. In general, when stress is higher, the coping efforts are greater (Aldwin, 2007). This is important to remember, because all too often studies simply correlate coping scores with outcomes, and find that all coping is related to distress. However, one must take into account the stressfulness of the situation to determine the true relationship between coping and outcomes.

The more interesting question is, “what is the appropriate level of effort for a given problem?” An early study by Aldwin and Revenson (1987) found a complicated interaction between coping effort level and coping efficacy. The best mental health was seen among individuals who expended minimal coping effort but thought that those efforts were efficacious. In contrast, individuals who expended minimal effort but who felt they were ineffective had the most distress. Similarly, a study by Coyne, Aldwin, and Lazarus (1981) found that chronically depressed individuals used more coping strategies, rather than fewer, as learned helplessness theory would predict. Presumably depressed individuals either did not know which strategies “worked” in any given situation, or used strategies ineffectively, and expended more energy in coping.

Issues of energy and its management have surfaced in theories of self-regulation and intrinsic motivation, as well as in theories of coping. On the one hand, there are theories that focus on resource depletion. Certainly Hobfoll (1998) has been a major proponent of the idea that coping with stress requires the utilization of resources; under chronic stress, one runs the risk of simply running out of resources. This view is consistent with theories of self-regulation that emphasize how the exercise of self-control depletes ego resources, thus interfering with subsequent activities that require energy (Baumeister, Bratslavsky, Muraven, & Tice, 1998). From this perspective, coping drains energy resources.

In contrast, theories of intrinsic motivation argue that self-regulatory activities that are performed autonomously, that is, willingly and with authentic assent, do not deplete ego energy (Moller, Deci, & Ryan, 2006). In fact, when individuals deal with demands in ways that meet their fundamental psychological needs, this kind of coping can actually replenish energy stores and enhance subjective vitality. This perspective is consistent with the notion of stress-related growth (SRG), sometimes called posttraumatic growth (PTG; Tedeschi & Calhoun, 2004). Theories of SRG posit the somewhat startling notion that individuals can increase their resources through coping with stress—at least in the long term. These resources include a greater sense of mastery and self-esteem, better coping skills, closer community ties, greater clarity in values, and sometimes an increased sense of spirituality.

One possibility which incorporates both of these perspectives is that the most adaptive coping profile may be one in which expenditure of the minimal amount of energy needed to be effective is combined with ways of coping that are rejuvenating, and thus refill energy reserves. Such a profile likely involves actively creating a balance among ways of coping—balancing approach with avoidance (Roth & Cohen, 1986), control with accommodation (Brandstädter & Rothermund, 2002), and self-reliance with reliance on others and reciprocity. Moreover, the capacity to manage one’s energy, like all regulatory capacities, should develop with age.

Theories that focus on the balance among ways of coping rather than on specific coping strategies are rare, but several promising perspectives can be identified. One theory, which may provide valuable insights into this process, is Stroebe and Schut’s (1999) dual process model of coping. Although approach and avoidance are generally seen as opposite coping styles, the dual process model suggests they can be seen as alternating strategies. Ideally, individuals use approach (i.e., problem-focused) coping when the environmental conditions permit and when the individual has enough skills and/or energy to attempt to modify the environment, and switch to avoidant (i.e., emotion-focused or accommodative) coping when energy flags or the situation

is not amenable to problem-solving efforts. By alternating between these modes, individuals can expend energy when it might be more efficacious, and yet conserve energy for future efforts. Aldwin et al. (in press) argued that this is a potential framework for understanding self-regulatory and energy management strategies across the life span.

A second important dual-process framework focuses on the balance between control and accommodation, or between goal pursuit and goal adjustment, in negotiating conflicting demands (Brandtstädter & Rothermund, 2002). Instead of seeing control and accommodation as competing processes, this perspective views them as complementary. As discussed in previous sections, neither is seen as “primary” and both are seen as adaptive. As explained by Brandtstädter and Rothermund, “well-being and self-esteem depend not only on perceived control over future developmental outcomes, but also on the readiness to accept one’s past (which is unalterable) and to disengage without regret from counterfactual life paths that were desired but have never been accomplished. . . . Wisdom seems to imply an integration of technical knowledge concerning the efficient pursuit of personal goals with an **experienced-based** sensitivity as to which goals are feasible and worth pursuing and which should be given up for the sake of other, more valuable ones” (2002, pp. 118–119).

A third perspective which focuses on energetic resources is a motivational theory of coping that explicitly incorporates the idea of constructive coping as a process of engagement that leads to the development of coping resources—specifically, skills and competencies, supportive relationships, and clarity of priorities (Skinner et al., 2003). Constructive families of coping allow people to coordinate their actions with the contingencies available in the environment (through problem-solving and information seeking), to coordinate their reliance on others with available social resources (through support-seeking and self-reliance), and to coordinate their preferences with available options (through negotiation and accommodation). Maladaptive families of coping are ones that lead people to give up too soon (helplessness and escape), to persist too long (perseveration), to fight when it is not productive (opposition), or to rely on others too much (delegation) or too little (social isolation).

Infancy and Childhood

In infancy, regulation of energy expenditure is critical, because very young infants lack sufficient body fat for sustained activity, and much of their energy is used in physical development. Murphy and Moriarty (1976) documented the ways in which even very young infants regulate stimulation, mainly by gaze aversion, fussing, or simply going to sleep. They also found that toddlers and young children are capable of bursts of energy, but similar bouts of effort and rest, or approach and avoidance, can be seen, especially when they are trying to master a new task.

Adolescents and young adults often have seemingly unlimited energy. They may exhibit “unrealistic” control expectations (Zuckerman, Knee, Kieffer, Rawsthorne, & Bruce, 1996), leading them to waste a lot of energy trying to control situations, which may not be amenable to control. Because they are faced with many new challenges and often do not as yet have “mature” coping repertoires, they actually report more daily stressors than middle-aged or **adult** adults, which Aldwin and Levenson (2001) interpreted as showing a lack of efficient coping ability.

One of the most important ways that children and adolescents manage the energy they use to cope is by relying on other people. Finding a balance between reliance on others and reliance on the self in coping with stress is an important life-long task. As mentioned previously, at the youngest ages infants and small children count on adult caregivers to perform many of their “coping” actions. In fact, as is made clear by work on attachment, seeking support from caregivers is the most frequently used strategy for coping with problems and distress for young children. Although support-seeking remains a central coping strategy, infants and children become steadily more self-reliant in dealing with stressors, and support-seeking decreases during childhood (ages 7–12), and then levels off during adolescence (Zimmer-Gembeck & Skinner, 2009). During middle and late childhood, children and adolescents still report that they frequently rely on support from others, including parents, friends, and romantic partners, when they are distressed (Frydenberg & Lewis, 2000).

At the same time, older children and adolescents show more differentiated and selective use of support-seeking than younger children (Zimmer-Gembeck & Skinner, 2009). A shift in the network of support seems to start in late childhood and early adolescence, when support-seeking from adults begins to decline and adolescents increasingly rely on support from others, particularly peers. Adolescents do seem to continue to rely on adults selectively: for guidance and to deal with uncontrollable stressors. This is part of a larger trend in which, as youth develop, they increasingly structure their own responses, including to whom they turn for support (Diamond & Aspinwall, 2003). Young people may continue to seek help and information from adults, and this might even increase with age. At the same time, there are decreases in other forms of support seeking from adults and increases in emotional self-regulation and emotional support-seeking from peers.

Overall, children take an increasingly active role in managing their social coping resources by turning to others whom they perceive will be of most assistance for particular stressors and their particular goals or needs. Although no study has been conducted on age changes in the importance of processes involved in dyadic coping, this suggests that young people become more aware of the dyadic aspects of coping, such as the mutuality of the dyad, as they get older. By adolescence, most young people have developed a sophisticated map of their social resources in times of stress.

Adulthood and Aging

Young adulthood is characterized by increasing emotional maturity, which can be defined as better regulation of both one’s self and one’s social relations. Better self and social regulation presumably entails more efficient use of energy resources. Aldwin and Levenson (2005) identified several facets of emotional maturity that emerge in young adulthood. First, there is increasing emotional stability and mastery (Roberts, Caspi, & Moffit, 2001), which may be the *sine qua non* for efficient use of coping strategies. Second, Arnett (2000) found that the hallmark of becoming an adult was accepting increasing responsibility for one’s own actions, which is a necessary prerequisite for learning from one’s mistakes and thus SRG. A related facet is the ability to accept critical feedback, especially from mentors but also from peers, which can increase one’s self-knowledge and also sets the stage for learning and development. Arnett also found that the ability to self-generate goals, as well as goal-directed behavior,

may also be necessary for efficient adaptation. Goals allow one to direct and focus energy and attention, providing a more cohesive and efficient adaptive framework. This new-found autonomy, however, is necessarily accompanied by an ability to work as a team member and engage in reciprocity, submerging one's own goals when necessary for the good of the larger group. Thus, emotional maturity entails a kind of dialectic between autonomy and accepting responsibility for one's own actions, on the one hand, and being able to accept (constructive) criticism and work in a group setting. The hypothesis that the ability to navigate this dialectic is important to coping in an efficient way, as it allows one to set goals and prioritize, but learn to work with others to achieve larger social goals, which are not necessarily amenable solely to individual effort.

With age, energy stores may become limited, and middle-aged and older adults may need to develop more efficient coping strategies, which allow them to expend less energy. Surprisingly, daily stressors decrease from midlife to late life, despite the increase in health problems, suggesting an increase in coping efficiency in an effort to conserve energy resources (Aldwin, Sutton, Chiara, & Spiro, 1996). Both Aldwin (2007) and Skinner and Edge (1998) have suggested that the decrease in problem-focused coping seen in later life may actually index greater efficiency rather than an increase in passivity with age. Johnson and Barer's (1993) qualitative study of coping in very late life suggests that elders may engage in more routinization in an attempt to avoid stress and to conserve energy. Boeninger, Shiraishi, Aldwin, and Spiro (2009) found that individuals may use appraisal processes to avoid perceiving situations as stressful.

The elderly ~~people~~ also have to strive to find a balance between self-reliance and reliance on others as their action resources diminish. Recent views of support have focused on its reciprocity (George, 2006; Schwarzer & Knoll, 2007). It is the rare individual who is only the recipient of social support; most individuals have a long history of providing and receiving support from family members, friends, and close colleagues. Antonucci (1985) describes this as a type of support bank in which individuals "make deposits" with the expectation that this will offset future support received. Further, reciprocity may play out over time with individuals alternating between sequences of social support provision over receiving. Schwarzer and Knoll (2007) found that there was a strong association between providing support at Time 1 and receiving support at a 6-month follow-up. Further, there may be differences in the types of support exchanged. For example, van Tilburg (1998) found that older adults received more instrumental support from family and friends over a 4-year period, but also provided more emotional support as a way of maintaining reciprocity.

■ FUTURE DIRECTIONS IN THE STUDY OF LIFE-SPAN COPING

This chapter has focused on some key issues that may serve to further integrate conceptions of coping and regulation across the life span. In doing so, we have identified gaps in the current literature which may be germane for future studies of coping. In terms of primary control, key questions for developmental researchers include more systematic inquiry into: (1) the kinds of coping promoted by a sense of control at different ages; (2) how developmental changes in the processes of perceiving control

lead to shifts in coping; and (3) the way that coping experiences shape expectations of control at different ages. Especially important is information about how social contexts and task conditions promote a sense of control that is resilient to repeated developmental changes and exposure to failures and losses.

For secondary control, important next steps for theorists are to clarify both overarching definitions and criteria for distinguishing beliefs and strategies. To what extent is secondary control simply reflective of coping self-efficacy and self-control? Moreover, now that secondary control has been differentiated from accommodation, research can focus on the balance between tenacious goal pursuit and flexible goal adjustment when dealing with obstacles and setbacks. Wrosch (in press) has conducted several studies demonstrating that accommodative processes have both psychological and physical benefits, especially in late life. Thus, understanding how accommodative coping develops is a particularly important next step for future study. This research can benefit from considering previous work on the development of accommodative coping during childhood, on the development of willing compliance (which focuses on both temperamental and social factors), and on the development of autonomous self-regulation (e.g., Ryan & Connell, 1989).

Similarly, future research is needed to examine the development of dyadic coping, and its changing impact on health and well-being across the life span. Such research might be most revealing of developmental processes if it is focused on studying individuals at times of transition, such as following relationship loss or during the formation of new close relationships. To our knowledge, little empirical work has been done on precisely how social networks influence stress appraisals. Work by Christakis and Fowler (2009) on the importance of social networks for moods and political attitudes might form a basis for future work in this area.

Finally, work on the importance of energy regulation for coping efforts potentially would be highly significant, but at this point there are a number of methodological and conceptual difficulties, which first must be addressed. Much of the work on coping processes takes place in a field setting and relies upon self-report data. While there have been attempts to investigate the importance of self-efficacy (e.g., Aldwin et al., 1996), to date, all of the work has relied on self report, and developing more objective measures of coping efficacy is an important first step. Further, there are also difficulties in judging what the "appropriate" level of energy expenditure is. A critical task is to determine how to judge whether an individual has expended insufficient effort, has engaged in perseverance, or is perseverating on a problem.

Research on energy regulation would likely benefit from models of coping and self-regulation which consider ways of dealing with demands that potentially generate energetic resources as well as deplete them. Some of the value of positive emotions and close relationships as well as laughter and fun even when coping with traumatic events may be explained by their powers of rejuvenation. Especially useful may be theories that incorporate the notion of profiles of coping and "balance"—between engagement and disengagement, between fighting and "going with the flow," and between reliance on self and others. The capacity to find and (re)achieve balance is likely a developmental process that depends on social partners, groups, and contexts, and is practiced through coping episodes themselves.

In summary, we believe that effective coping and self-regulation are critical to the maintenance of both mental and physical health at all stages of the life span. However, many issues remain in the conceptualization and measurement of these

constructs in age-appropriate ways. Current investigations have yielded extensive and sometimes counter-intuitive insights into the adaptive process, and future research should add to our rich understanding of these processes and their effects on mental and physical health.

■ REFERENCES

- Adams, V. H., & Jackson, J. S. (2000). The contribution of hope to the quality of life among aging African Americans: 1980–1992. *International Journal of Aging and Human Development*, *50*, 279–297.
- Aldwin, C. M. (2007). *Stress, coping, and development: An integrative approach* (2nd ed.). New York: Guilford.
- Aldwin, C. M., & Levenson, M. R. (2001). Stress, coping, and health at mid-life: A developmental perspective. In M. E. Lachman (Ed.), *The handbook of midlife development* (pp. 188–214). New York: Wiley.
- Aldwin, C. M., & Levenson, M. R. (2005). Military service and emotional maturation: The Chelsea Pensioners. In K. W. Warner & G. Elder, Jr. (Eds.), *Historical influences on lives and aging* (pp. 255–281). New York: Plenum.
- Aldwin, C., & Revenson, T. (1987). Does coping help? A re-examination of the relationship between coping and mental health. *Journal of Personality & Social Psychology*, *53*, 337–348.
- Aldwin, C. M., Sutton, K. J., Chiara, G., & Spiro, A. III. (1996). Age differences in stress, coping, and appraisal: Findings from the Normative Aging Study. *Journals of Gerontology: Psychological Sciences*, *51B*, P179–P188.
- Aldwin, C. M., Yancura, L. A., & Boeninger, D. (*in press*). Coping across the lifespan. In A. Freund & M. Lamb (Eds.), *Handbook of lifespan developmental psychology*, (Vol. 2). New York: John Wiley.
- AQ 4 Amat, J., Paul, E., Zarza, C., Watkins, L. R., & Maier, S. F. (2007). Previous experience with behavioral control over stress blocks the behavioral and dorsal raphe nucleus activating effects of later uncontrollable stress: Role of the ventral medial prefrontal cortex. *The Journal of Neuroscience*, *26*, 13264–13272.
- Antonucci, T. C. (1985). Personal characteristics, social networks, and social behavior. In R. H. Binstock & E. Shanas (Eds.), *Handbook of aging and the social sciences* (2nd ed.). New York: Van Nostrand Reinhold.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*, 469–480.
- Aspinwall, L. G., & Taylor, S. E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin*, *121*, 417–436.
- Avlund, K., Lund, R., Holstein, B. E., & Due, P. (2004). Social relations as determinant of onset of disability in aging. *Archives of Gerontology and Geriatrics*, *38*, 85–99.
- Badr, H. (2004). Coping in marital dyads: A contextual perspective on the role of gender and health. *Personal Relationships*, *11*, 197–211.
- Baltes, M. M. (1996). *The many faces of dependency in old age*. New York: Cambridge University Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Barrett, K. C., & Campos, J. J. (1991). A diacritical function approach to emotions and coping. In E. M. Cummings, A. L. Greene, & K. H. Karraker (Eds.), *Life-span developmental psychology: Perspectives on stress and coping* (pp. 21–41). Hillsdale, NJ: Erlbaum.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality & Social Psychology*, *74*, 1252–1265.
- Baumrind, D. (1996). The discipline controversy revisited. *Family Relations*, *45*, 405–414.
- Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The relationship closeness inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality & Social Psychology*, *57*, 792–807.
- Berg, C. A., Smith, T. W., Ko, K. J., Henry, N. J. M., Florsheim, P., Pearce, G. et al. (2007). Task control and cognitive abilities of self and spouse in collaboration in middle-aged and older couples. *Psychology and Aging*, *22*, 420–427.
- Berg, C. A., & Upchurch, R. (2007). A developmental-contextual model of couples coping with chronic illness across the adult life span. *Psychological Bulletin*, *133*, 920–954.

- Berg, C. A., Meegan, S. P., & Deviney, F. P. (1998). A social contextual model of coping with everyday problems across the life span. *International Journal of Behavioral Development, 22*, 239–261.
- Bodenmann, G. (2005). ~~Dyadic coping and its significance for marital functioning. In T. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 33–50). Washington, DC: American Psychological Association.~~
- Bodenmann, G., Pihet, S., & Kayser, K. (2006). The relationship between dyadic coping and marital quality: A 2-year longitudinal study. *Journal of Family Psychology, 20*, 485–493.
- Boeninger, D. K., Shiraishi, R. W., Aldwin, C. M., & Spiro, A. III. (2009). Why do older men report lower stress ratings? Findings from the Normative Aging Study. *International Journal of Aging & Human Development, 68*, 149–170.
- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5*, 58–67.
- Brandtstädter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: A two-process framework. *Developmental Review, 22*, 117–150.
- Braungart-Rieker, J. M., & Stifter, C. A. (1996). Infants' responses to frustrating situations: Continuity and change in reactivity and regulation. *Child Development, 67*, 1767–1779.
- Brim, O. G. (1992). *Ambition: How we manage success and failure throughout our lives*. New York: Basic Books.
- Bronson, M. B. (2000). *Self-regulation in early childhood: Nature and nurture*. New York: Guilford Press.
- Carstensen, L. L., Gottman, J. M., & Levenson, R. W. (1995). Emotional behavior in long-term marriage. *Psychology and Aging, 10*, 140–149.
- Christakis, N. A., & Fowler, J. H. (2009). *Connected: The surprising power of our social networks and how they shape our lives*. New York: Little, Brown & Company.
- Cicchetti, D., & Rogosch, F. A. (2009). Adaptive coping under conditions of extreme stress: Multi-level influences on the determinants of resilience in maltreated children. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Perspective on children's coping with stress as regulation of emotion, cognition and behavior. New directions in child and adolescent development series*. San Francisco: Jossey-Bass.
- Cole, P. M., Teti, L. O., & Zahn-Waxler, C. (2003). Mutual emotion regulation and the stability of conduct problems between preschool and early school age. *Development and Psychopathology, 15*, 1–18.
- Compas, B. E., Worsham, N. L., & Ey, S. (1992). Conceptual and developmental issues in children's coping with stress. In A. M. La Greca, L. J. Siegel, J. L. Wallander, & C. E. Walker (Eds.), *Stress and coping in child health* (pp. 7–24). New York: Guilford Press.
- Compas, B., O'Connor-Smith, J. K., Saltzman, S., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*, 87–127.
- Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Counseling and Clinical Psychology, 68*, 976–992.
- Covington, M. V., & Omelich, C. L. (1979). Effort: The double-edged sword in school achievement. *Journal of Educational Psychology, 71*, 169–182.
- Coyne, J., Aldwin, C., & Lazarus, R. (1981). Depression and coping in stressful episodes. *Journal of Abnormal Psychology, 90*, 439–447.
- Coyne, J. C., & Smith, D. A. F. (1991). Couples coping with myocardial infarction: Contextual perspectives on patient self-efficacy. *Journal of Personality & Social Psychology, 61*, 404–412.
- Coyne, J. C., Wortman, C. B., & Lehman, D. R. (1988). The other side of support: Emotional overinvolvement and miscarried helping. In B. H. Gottlieb (Ed.), *Marshaling social support* (pp. 305–330). Thousand Oaks, CA: Sage.
- Cutrona, C. E., & Gardner, K. A. (2006). Stress in couples: The process of dyadic coping. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 501–515). New York: Cambridge University Press.
- Diamond, L. M., & Aspinwall, L. G. (2003). Emotion regulation across the life span: An integrative perspective emphasizing self-regulation, positive affect, and dyadic processes. *Motivation and Emotions, 27*, 125–156.
- Dixon, R. A. (1999). Exploring cognition in interactive situations: The aging of N+1 minds. In T. M. Hess & F. Blanchard-Fields (Eds.), *Social cognition and aging* (pp. 267–290). San Diego, CA: Academic Press.

- Dixon, R. A., & Gould, O. N. (1998). Younger and older adults collaborating on retelling everyday stories. *Applied Developmental Science, 2*, 160–171.
- Dunahoo, C. L., Hobfoll, S. E., Monnier, J., Hulsizer, M. R., & Johnson, R. (1998). There's more than rugged individualism in coping. Part 1: Even the Lone Ranger had Tonto. *Anxiety, Stress, and Coping, 11*, 137–165.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Eisenberg, N., Valiente, C., & Sulik, M. (2009). How the study of regulation can inform the study of coping. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation, New directions in child and adolescent development*. San Francisco: Jossey-Bass.
- Eisenberg, N., Fabes, R. A., & Guthrie, I. K. (1997). Coping with stress: The roles of regulation and development. In S. A. Wolchik, & I. N. Sandler (Eds.), *Handbook of children's coping: Linking theory and intervention* (pp. 41–70). New York: Plenum Press.
- Eisenberg, N., & Zhou, Q. (2000). Regulation from a developmental perspective. *Psychological Inquiry, 11*, 167–171.
- Elliot, A. J., & Dweck, C. S. (Eds.). (2005). *Handbook of competence and motivation*. New York: Guilford.
- Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development, 72*, 907–920.
- Feeney, J. A. (2004). Adult attachment and relationship functioning under stressful conditions: Understanding partners' responses to conflict and challenge. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 339–364). New York: Guilford Publications.
- Figueiras, M. J., & Weinman, J. (2003). Do congruent patient and spouse perceptions of myocardial infarction predict recovery? *Psychology and Health, 18*, 201–216.
- Flammer, A. (1995). Developmental analysis of control beliefs. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 69–113). New York: Cambridge University Press.
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality & Social Psychology, 46*(4), 839–852.
- Fox, N. A., & Calkins, S. D. (2003). The development of self-control of emotion: Intrinsic and extrinsic influences. *Motivation and Emotion, 27*, 7–26.
- Frydenberg, E., & Lewis, R. (2000). Teaching coping to adolescents: When and to whom? *American Educational Research Journal, 37*, 727–745.
- Gagnon, L. M., & Dixon, R. A. (2008). Remembering and retelling stories in individual and collaborative contexts. *Applied Cognitive Psychology, 22*, 1275–1297.
- George, L. K. (2006). Perceived quality of life. In R. H. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences* (6th ed.). San Diego, CA: Elsevier.
- Gianino, A., & Tronick, E. Z. (1988). The mutual regulation model: The infant's self and interactive regulation and coping and defensive capacities. In T. M. Field, P. M. McCabe, & P. M. Schneiderman (Eds.), *Stress and coping across development*. Hillsdale, NJ: Erlbaum.
- Gould, S. J. (1999). A critique of Heckhausen and Schulz's (1995) life-span theory of control from a cross-cultural perspective. *Psychological Review, 106*, 597–604.
- Greve, W., & Strobl, R. (2004). Social and individual coping with threats: Outlines of an interdisciplinary perspective. *Review of General Psychology, 8*, 194–207.
- Grolnick, W. S., Bridges, L. J., & Connell, J. P. (1996). Emotion regulation in two-year-olds: Strategies and emotional expression in four contexts. *Child Development, 67*, 928–941.
- Gross, J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*, 271–299.
- Gunnar, M. R., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology, 58*, 11.1–11.29.
- Gunnar, M. R., & Vazquez, D. (2006). Stress neurobiology and developmental psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology* (Vol. 2, 2nd ed., pp. 533–577). Hoboken, NJ: Wiley.
- Gurung, R. A. R., Taylor, S. E., & Seeman, T. E. (2003). Accounting for changes in social support among married older adults: Insights from the MacArthur Studies of Successful Aging. *Psychology and Aging, 18*, 487–496.
- Ha, J., Carr, D., Utz, R. L., & Nesse, R. (2006). Older adults' perceptions of intergenerational support after widowhood: How do men and women differ? *Journal of Family Issues, 27*, 3–30.

- Heckhausen, H. (1982). The development of achievement motivation. In W. W. Hartup (Ed.), *Review of child development research*, (Vol. 6, pp. 600–668). Chicago: University of Chicago Press.
- Heckhausen, H. (1984). Emergent achievement behavior: Some early developments. In M. Haehr (Ed.), *Advances in motivation and achievement* (pp. 1–32). Greenwich, CT: JAI Press.
- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review*, *102*, 284–304.
- Heijmans, M., de Ridder, D., & Bensing, J. (1999). Dissimilarity in patients' and spouses' representations of chronic illness: Exploration of relations to patient adaptation. *Psychology and Health*, *14*, 451–466.
- Hobfoll, S. E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum Press.
- Holodynski, M., & Friedlmeier, W. (2006). *Development of emotions and emotion regulation*. New York: Springer.
- Johnson, C. I., & Barer, B. M. (1993). Coping and a sense of control among the oldest old: An exploratory analysis. *Journal of Aging Studies*, *7*, 67–80.
- Johnson, N. J., Backlund, E., Sorlie, P. D., & Loveless C. A. (2000). Marital status and mortality: The national longitudinal mortality study. *Annals of Epidemiology*, *10*(4), 224–238.
- Kliewer, W., Fearnow, M. D., & Miller, P. A. (1996). Coping socialization in middle childhood: Tests of maternal and paternal influences. *Child Development*, *67*, 2339–2357.
- Kliewer, W., & Lewis, H. (1995). Family influences on coping processes in children and adolescents with sickle cell disease. *Journal of Pediatric Psychology*, *20*, 511–525.
- Kliewer, W., Parrish, K. A., Taylor, K. W., Jackson, K., Walker, J. M., & Shivy, V. A. (2006). Socialization of coping with community violence: Influences of caregiver coaching, modeling, and family context. *Child Development*, *77*, 605–623.
- Knoll, N., & Schwarzer, R. (2002). Gender and age differences in social support: A study on East German refugees. In G. Weidner, M. Kopp, & M. Kristenson (Eds.), *Heart disease: Environment, stress, and gender. NATO Science Series, Series I: Life and Behavioural Sciences* (Vol. 327). Amsterdam, The Netherlands: IOS Press.
- Kochanska, G. (2002). Committed compliance, moral self, and internalization: A mediational model. *Developmental Psychology*, *38*, 339–351.
- Kochanska, G., Aksan, N., & Carlson (2005). Temperament, relationships, and young children's receptive cooperation with their parents. *Developmental Psychology*, *41*, 648–660.
- Kochanska, G., Coy, K. T., & Murray, K. T. (2005). The development of self-regulation in the first four years of life. *Child Development*, *72*, 1091–1111.
- Koplik, E. K., Lamping, D. L., & Reznikoff, M. (1992). The relationship of mother-child coping styles and mothers' presence on children's response to dental stress. *Journal of Psychology: Interdisciplinary and Applied*, *126*, 79–92.
- Kopp, C. B. (2002). Commentary: The codevelopments of attention and emotion regulation. *Infancy*, *3*, 199–208.
- Kopp, C. B. (2009). Emotion focused coping in young children: Self and self-regulatory processes. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Perspective on children's coping with stress as regulation of emotion, cognition and behavior. New directions in child and adolescent development series*. San Francisco: Jossey-Bass.
- Lachman, M. E., & Prenda-Firth, K. M. (2004). The adaptive value of feeling in control during mid-life. In O. G. Brim, Jr., C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we? A national study of well-being at midlife* (pp. 320–349). Chicago: The University of Chicago Press.
- Lewis, M., & Ramsay, D. (1999). Environments and stress reduction. In M. Lewis & D. Ramsay (Eds.), *Soothing & stress* (pp. 171–192). Mahwah, NJ: Erlbaum.
- Losoya, S., Eisenberg, N., & Fabes, R. A. (1998). Developmental issues in the study of coping. *International Journal of Behavioral Development*, *22*, 287–313.
- Luthar, S. S. (in press). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Risk, disorder, and adaptation* (Vol. 3, 2nd ed). New York: Wiley.
- Masten, A. S., & Wright, M. O. (2009). Resilience over the lifespan: Developmental perspectives on resistance, recovery, and transformation. In J. W. Reich (Eds.), *Handbook of adult resilience* (pp. 213–237). New York: Guilford.
- McClelland, M. M., Ponitz, C. C., Messersmith, E. E., & Tominey, S. (in press). Self-regulation: The integration of cognition and emotion. In R. Lerner (Series Ed.) & W. Overton (Vol. Ed.), *Handbook of life-span development*. Hoboken, NJ: Wiley and Sons.

- Mendes de Leon, C. F., Gold, D. T., Glass, T. A., Kaplan, L., & George, L. K. (2001). Disability as a function of social networks and support in elderly African Americans and Whites: The Duke EPESE 1986–1992. *Journals of Gerontology: Psychological Sciences, 56B*, 179–190.
- Metcalf, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106*, 3–19.
- Mikulincer, M., Shaver, P. R., & Hoesch, N. (2006). Attachment bases of emotion regulation and posttraumatic adjustment. In D. K. Snyder, J. A. Simpson, & J. N. Hughes (Eds.), *Emotion regulation in couples and families* (pp. 77–99). Washington, DC: American Psychological Association.
- Miller, S. M., Green, V. A., & Bales, C. B. (1999). What you don't know can hurt you: A cognitive-social framework for understanding children's responses to stress. In M. Lewis & D. Ramsay (Eds.), *Soothing & stress* (pp. 257–292). Mahwah, NJ: Erlbaum.
- Moller, A., Deci, E. L., & Ryan, R. M. (2006). Choice and ego-depletion: The moderating role of autonomy. *Personality & Social Psychology Bulletin, 32*, 1024–1036.
- Morling, B., & Evered, S. (2006). Secondary control reviewed and defined. *Psychological Bulletin, 132*, 269–296.
- Murphy, L., & Moriarty, A. (1976). *Vulnerability, coping, and growth: From infancy to adolescence*. New Haven, CT: Yale University Press.
- National Research Council [NRC]. (2000). *From neurons to neighborhoods*. Washington, DC: National Academies Press.
- Newman, R. S. (2000). Social influences on the development of children's adaptive help seeking: The role of parents, teachers, and peers. *Developmental Review, 20*, 350–404.
- Newsom, J. T. (1999). Another side to caregiving: Negative reactions to being helped. *Current Directions in Psychological Science, 8*, 183–187.
- Nicholls, J. G. (1978). The development of the concepts of effort and ability, perceptions of academic attainment, and the understanding that difficult tasks require more ability. *Child Development, 49*, 800–814.
- Nolen-Hoeksma, S., Girgus, J. S., & Seligman, M. E. P. (1986). Learned helplessness in children: A longitudinal study of depression, achievement, and explanatory style. *Journal of Personality & Social Psychology, 51*(2), 435–442.
- Nolen-Hoeksma, S., Wisco, B., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3*, 400–424.
- Papousek, H., & Papousek, M. (1980). Early ontogeny of human social interaction: Its biological roots and social dimensions. In M. von Cranach, K. Foppa, W. Lepenies, & D. Ploog (Eds.), *Human ethology: Claims and limits of a new discipline*. Cambridge: Cambridge University.
- Paris, S. G., & Newman, R. S. (1990). Developmental aspects of self-regulated learning. *Educational Psychologist, 25*, 87–102.
- Peterson, C., Maier, S. F., & Seligman, M. E. P. (1993). *Learned helplessness: A theory for the age of personal control*. New York: Oxford University Press.
- Power, T. G. (2004). Stress and coping in childhood: The parents' role. *Parenting: Science and Practice, 4*, 271–317.
- Propper, C., & Moore, G. A. (2006). The influence of parenting on infant emotionality: A multi-level psychobiological perspective. *Developmental Review, 26*, 427–460.
- Revenson, T. A. (2003). Scenes from a marriage: Examining support, coping, and gender within the context of chronic illness. In J. Suls & K. A. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 530–559). Malden, MA: Blackwell.
- Revenson, T. A., & Pranikoff, J. R. (2005). A contextual approach to treatment decision making among breast cancer survivors. *Health Psychology, 24*, S93–S98.
- Roberts, B. W., Caspi, A., & Moffitt, T. E. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality & Social Psychology, 81*, 670–683.
- Rook, K. S., Mavandadi, S., Sorkin, D. H., & Zettel, L. A. (2007). Optimizing social relationships as a resource for health and well-being in later life. In C. M. Aldwin, C. L. Park, & A. Spiro III (Eds.), *Handbook of health psychology & aging* (pp. 267–285). New York: Guilford.
- Roth, S., & Cohen, L. (1986). Approach, avoidance, and coping with stress. *American Psychologist, 41*, 813–819.
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality & Social Psychology, 42*, 5–37.
- Ruble, D. (1983). The development of social comparison processes and their role in achievement-related self-socialization. In E. T. Higgins, D. N. Ruble, & W. W. Hartup (Eds.), *Social cognition*

- and social development: A sociocultural perspective (pp. 134–157). New York: Cambridge University Press.
- Rueda, M. R., & Rothbart, M. K. (2009). Temperament, coping, and development. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Perspective on children's coping with stress as regulation of emotion, cognition and behavior. New directions in child and adolescent development series*. San Francisco: Jossey-Bass.
- Ryan, R. M., & Connell, P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality & Social Psychology*, *57*, 749–761.
- Sameroff, A. J., & Haith, M. M. (1996). *The five to seven year shift: The age of reason and responsibility*. Chicago: University of Chicago Press.
- Schmitz, B., & Skinner, E. (1993). Perceived control, effort, and academic performance: Interindividual, intraindividual, and multivariate time-series analyses. *Journal of Personality & Social Psychology*, *64*, 1010–1028.
- Schulz, R., Wrosch, C., & Heckhausen, J. (2003). The life-span theory of control: Issues and evidence. In S. H. Zarit, L. I. Pearlin, & K. W. Schaie (Eds.), *Personal control in social and life course contexts* (pp. 233–262). New York: Springer.
- Schwarzer, R., & Knoll, N. (2007). Functional roles of social support within the stress and coping process: A theoretical and empirical overview. *International Journal of Psychology*, *42*, 243–252.
- Seeman, T. E., Bruce, M. L., & McAvay, G. J. (1996). Social network characteristics and onset of ADL disability: MacArthur studies of successful aging. *Journal of Gerontology*, *51B*, 5191–5200.
- Seiffge-Krenke, I. (1995). *Stress, coping, and relationships in adolescence*. Hillsdale, NJ: Erlbaum.
- Skaff, M. M. (2007). Sense of control and health: A dynamic duo in the aging process. In C. M. Aldwin, C. L. Park, & A. Spiro III (Eds.), *Handbook of Health Psychology & Aging* (pp. 186–209). New York: Guilford.
- Skinner, E. A. (1995). *Perceived control, motivation, and coping*. Newbury Park, CA: Sage.
- Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality & Social Psychology*, *71*, 549–570.
- Skinner, E. A. (1999). Action regulation, coping, and development. In J. B. Brandtstädter & R. M. Lerner (Eds.), *Action and self-development* (pp. 465–503). Thousand Oaks, CA: Sage.
- Skinner, E. A. (2007). Secondary control critiqued: Is it secondary? Is it control? Commentary on Morling and Evered, 2006. *Psychological Bulletin*, *133*, 911–916.
- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, *129*, 216–269.
- Skinner, E., & Edge, K. (1998). Reflections on coping and development across the lifespan. *International Journal of Behavioral Development*, *22*, 357–366.
- Skinner, E. A., Zimmer-Gembeck, M. J., & Connell, J. P. (1998). Individual differences and the development of perceived control. *Monographs of the Society for Research in Child Development*, *63*(2–3), 1–220.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology*, *58*, 119–144.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2009). Challenges to the developmental study of coping. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation, New Directions in Child and Adolescent Development*. San Francisco: Jossey-Bass.
- Sroufe, L. A. (1996). *Emotional development: The organization of emotional life in the early years*. New York: Cambridge University Press.
- Stipek, D. J., Gralinski, J. H., & Kopp, C. B. (1990). Self-concept development in the toddler years. *Developmental Psychology*, *26*, 972–977.
- Stipek, D. J., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development*, *60*, 521–538.
- Stroebe, M., & Schut, H. (1999). The dual process model of coping with bereavement: Rationale and description. *Death Studies*, *23*, 197–224.
- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*, 1–18.
- Thoits, P. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology*, *54*, 416–423.
- Thompson, S. C., Sobolew-Shubin, A., Galbraith, M. E., Schwankovsky, L., & Cruzen, D. (1993). Maintaining perceptions of control: Finding perceived control in low-control circumstances. *Journal of Personality & Social Psychology*, *64*, 293–304.

- Thompson, S. C., Thomas, C., Rickbaugh, C. A., Tantamjarik, P., Otsuki, T., Pan, D., et al. (1998). Primary and secondary control over age-related changes in physical appearance. *Journal of Personality, 66*, 583–605.
- Thompson, S., Nanni, C., & Levine, A. (1994). Primary versus secondary and central versus consequence-related control in HIV-positive men. *Journal of Personality & Social Psychology, 67*, 540–547.
- Tolan, P., & Grant, K. (2009). How social and cultural contexts shape the development of coping: Youth in the inner-city as an example. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation, New Directions in Child and Adolescent Development*. San Francisco: Jossey-Bass.
- Valiente, C., Fabes, R. A., Eisenberg, N., & Spinrad, T. L. (2004). The relations of parental expressivity and support to children's coping with daily stress. *Journal of Family Psychology, 18*, 97–106.
- Van Tilburg, T. (1998). Loosing and gaining in old age: Changes in personal network size and social support in a four year longitudinal study. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 53B*, S313–S323.
- Walsh, K., Fortier, M. A., & DiLillo, D. (2010). Adult coping with childhood sexual abuse: A theoretical and empirical review. *Aggression and Violent Behavior, 15*, 1–13.
- Wright, D. L., & Aquilino, W. S. (1998). Influence of emotional support exchange in marriage on caregiving wives' burden and marital satisfaction. *Family Relations, 47*, 195–204.
- Wrosch, C. (in press). Self-regulation of unattainable goals and pathways to quality of life. In S. Folkman (Ed.), *Oxford handbook of stress, health, & coping*. London: Oxford University.
- Zautra, A. J., & Manne, S. J. (1992). Coping with rheumatoid arthritis: A review of a decade of research. *Annals of Behavioral Medicine, 14*, 31–39.
- Zimmer-Gembeck, M. J., & Locke, E. M. (2007). The socialization of adolescent coping: Relationships at home and school. *Journal of Adolescence, 30*, 1–16.
- Zimmer-Gembeck, M. J., & Skinner, E. A. (2008). Adolescents' coping with stress: Development and diversity. *Prevention Researcher, 15*, 3–7.
- Zimmer-Gembeck, M. J., & Skinner, E. A. (2009). *The development of coping across childhood and adolescence: An integrative review and critique of research*. Manuscript submitted for publication.
- Zimmerman, B. J., & Schunk, D. H. (Eds.). (2001). *Self-regulated learning and academic performance: Theoretical perspectives*. Mahwah, NJ: Erlbaum.
- Zuckerman, M., Knee, C. R., Kieffer, S. C., Rawsthorne, L., & Bruce, L. M. (1996). Beliefs in realistic and unrealistic control: Assessment and implications. *Journal of Personality, 64*, 435–464.

Author Queries

AQ 1: Please provide complete details for the references [Bodenmann, 1995 and Bodenmann & Cina, 1999] in the reference list. **Added 1995 ref to ref list**

AQ 2: Please check and confirm if the sentence [As we shall... in late life] is OK as edited.

AQ 3: Should this be “experience-based”? Please check.

AQ 4: Please update year of publication and page range for the references [Aldwin, Yancura, & Boeninger, in press; McClelland, Ponitz, Messersmith, & Tominey, in press; Wrosch, in press] if the referred book has been published.

Dr Berney and Dr Marshall discuss the role of self-regulation throughout our lives, from childhood through adulthood. DISCLAIMER – Some of our contents and links are sponsored. Psychreg is not responsible for the contents of external websites. Psychreg is mainly for information purposes only. Never disregard professional psychological or medical advice, nor delay in seeking professional advice or treatment because of something you have read on this website. We use cookies to ensure that we give you the best experience on our website. If you continue to use this site we will assume that you are happy with it.OK. COPING AND SELF/REGULATION ACROSS THE LIFE SPAN (Chapter 22) (Issues of: COPING AND SELF/REGULATION ACROSS THE LIFE SPAN (Chapter 22). Understanding the degree to which self-regulatory resources may be enhanced, restored, and trained will have enormous implications for basic science and applied fields. It is also of great import to understand whether or not physical activity self-regulation is a domain-specific behavior associated with specific brain networks, or to determine the extent to which regulatory network-sharing occurs. The aim of this Frontiers Research Topic is to curate contributions from researchers in social and cognitive neurosciences and related fields, whose work involves the study of physical activity behavior