The Development of Coping Resources in Adulthood

Carolyn M. Aldwin and Karen J. Sutton
Department of Human and Community Development
University of California, Davis

Margie Lachman
Brandeis University

ABSTRACT We examined three community samples to determine whether stressful episodes form a context for the development of coping resources in adulthood. The first study found that 81.9% of a sample of 845 older men reported drawing upon prior experiences in coping with a recent problem. Content analysis revealed that only 22.7% drew upon similar stressful episodes; the rest drew upon problems from work, the military, illnesses, deaths, etc. The second study replicated the earlier findings in 102 men and women, ages 24 to 84, who reported on a recent low point in semistructured interviews. In addition, 75% reported long-term effects, equally split between negative, positive, and mixed effects. Those individuals who perceived advantages from the

Data collection on the Normative Aging Study was supported by a FIRST Award (R29-AG07465) from the National Institute on Aging and by two services of the Department of Veterans Affairs (Medical Research and Health Services R&D). The Health and Personality Styles Survey was supported by NIA Grant AG06038 and the John D. and Catherine T. MacArthur Research Network on Successful Midlife Development; the Davis Longitudinal Study was also supported by the MacArthur Research Network, as well as by Hatch Funds from the University of California, Davis (UCD), Cooperative Extension Service and a UCD New Faculty Research Grant. Portions of this research were presented by the first author in an invited address at the 1994 annual meeting of the American Psychological Association. We would like to thank Gina Chiara, Cory Lewkowicz, Rebecca Parker, Cory Fitzpatrick, and Rael Dornfest for their help in data collection and coding, Leanne Friedman for her help in data analysis, and Michael R. Levenson and an anonymous reviewer for their helpful comments on earlier drafts of this article. Correspondence should be addressed to Carolyn M. Aldwin, Department of Human and Community Development, University of California, Davis, CA 95616. E-mail: CMALDWIN@UCDAVIS.EDU.

Copyright © 1996 by Duke University Press.
low point were significantly more likely to report positive long-term effects. The third study replicated the findings from the first two studies in a sample of 941 men and women ages 23 to 62. Path analyses showed that coping strategies differentially predicted perceived positive or negative outcomes, which in turn predicted current mastery and depression levels. While the findings are cross-sectional and causality cannot be inferred, they are nonetheless supportive of the effects of stress and coping on personality.

Historically, the stress and coping field has assumed a causal relationship between personality and coping styles, and, to a lesser extent, the appraisal of stress. The study of coping is rooted in individual differences in reaction to stress, with the assumption that how individuals cope is largely a function of personality characteristics, which result in global coping styles such as approach/avoidance or blunting/monitoring (e.g., Endler & Parker, 1990; Miller, 1980; Suls & Fletcher, 1985). There is evidence that personality traits such as neuroticism and hardiness affect the use of coping strategies (e.g., Bolger, 1990; Florian, Mikulincer, & Taubman, 1995), as well as the appraisal of stress (Aldwin, Levenson, Spiro, & Bossé, 1989).

Researchers have also documented the effects of the environment on the utilization of coping strategies. Coping style measures tend to be only weakly correlated with the coping strategies used in stressful situations (Carver & Scheier, 1994), and the evidence is strong that coping varies as both a function of the situation (e.g., Folkman & Lazarus, 1980; Mattlin, Wethington, & Kessler, 1990; Mechanic, 1978; Pearlin & Schooler, 1978) and as a function of time within context (Bolger, 1990; Dunkel-Schetter, Feinstein, Taylor, & Falke, 1992; Folkman & Lazarus, 1985). Thus, stress and coping processes are widely understood to be affected by both personality and the environment.

A transactional perspective, however, posits bidirectional relations among personality, stress, coping, and the environment (cf. Aldwin, 1994a; Lazarus & Folkman, 1984), but the impact of stress and coping processes on personality characteristics has rarely been studied. Indeed, given the brevity of psychological distress subsequent to stressful episodes (cf. DeLongis, Folkman, & Lazarus, 1988; Depue & Monroe, 1986), it is tempting to conclude that most people are fairly resilient to stress and that stress has few long-term effects, either on mental health or personality. The exception to this is exposure to extremely traumatic events, which may result in sequelae such as heightened irritability, which can last for years or even decades after exposure (for
reviews, see Friedman & Schnurr, in press; Kahana, 1992; Schnurr & Aldwin, 1993). However, for the most part, studies of stress and coping have focused on negative sequelae such as symptoms rather than on other personality processes, such as mastery, self-esteem, and values, although there is increasing evidence in the literature for possible positive long-term effects of stress and coping on personality processes (Affleck, Tennen, Croog, & Levine, 1987; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1995).

The purpose of this study is to briefly review the literature on the effects of the stress and coping process on personality, focusing primarily on the positive aspects of stress. We will then present a model as to how long-term effects of stress and coping on personality can arise. This model will be tested in three studies, which will examine the extent to which people draw upon earlier stressful episodes in dealing with current problems, whether or not they perceive long-term effects from major stressful events, the types of advantages derived (if any) from coping with these events, and their association with personality characteristics and mental health.

**Positive Aspects of Stress**

While stress is widely perceived to have primarily negative effects on well-being, anecdotal reports from three areas of research—coping with illness, bereavement, and trauma—suggest that sometimes individuals perceive positive benefits from undergoing extremely stressful events. Moos and Schaefer (1986) first synthesized anecdotal reports from the coping with illness literature and suggested that the positive benefits of stress included things such as increases in mastery, self-esteem, and confidence, changes in values, increased empathy and closeness to significant others, and better perspective taking. Trauma researchers have long observed positive benefits, focusing on the development of meaning and the transformation of the self (Epstein, 1991; Janoff-Bulman, 1989), as well as increases in social integration, mastery, and empathy (for a review, see Aldwin, 1994a).

There have been several qualitative studies examining this question that utilize interviews with individuals who are undergoing extremely stressful situations. For example, over 50% of the rape victims in one sample felt that they had changed in a positive direction, including improved self-concept and mastery, and fewer than 15% felt that they had changed in a negative direction (Burt & Katz, 1987). Similar results
have been found in a sample coping with bereavement (Calhoun & Tedeschi, 1990) and combat veterans in the Terman sample (Elder & Clipp, 1989). Beardslee (1989) found increases in self-understanding (i.e., wisdom) in several disparate, highly stressed samples (see also Heatherton & Nichols, 1994).

A handful of studies have shown that perceiving benefits from experiencing stressful events can result in positive outcomes. Combat veterans who perceive benefits are less likely to suffer from posttraumatic stress disorder (Aldwin, Levenson, & Spiro, 1994; Ursano, Wheatly, Sledge, Rahe, & Carlson, 1986). Men who suffered a myocardial infarction showed better survival after 8 years if they perceived benefits from this experience (Affleck et al., 1987), while infants who had been in a neonatal crisis unit had better developmental gains if their mothers had perceived benefits from this crisis (Affleck, Tennen, & Rowe, 1991). Finally, Park et al. (1996) documented increases in optimism and positive affectivity in a longitudinal study of college students who perceived benefits from undergoing stressful life events.

Perceiving benefits from undergoing crises could be construed as a form of denial (cf. Taylor & Brown, 1988), but more recent work suggests that this sort of "illusion management" may promote growth-oriented coping (Taylor & Brown, 1994). For example, Affleck et al. (1987) suggested that mothers of premature infants who perceived benefits from their experience with neonatal intensive care units provided better home environments for their infants, which might have promoted the positive developmental outcomes.

Another problem with this literature is that the studies have focused on small, specialized samples. The extent to which this process occurs in more general community samples is essentially unknown, although significant correlations between stress and positive affect in general samples have been reported for both hassles (DeLongis et al., 1988) and life events (Zautra, Reich, & Guarnaccia, 1990).

Zautra and Sandler (1983) proposed two different models of stress and outcomes, one of which would lead to positive outcomes, the other to negative ones, presumably in different people. While in many ways this model is plausible, it is likely that the positive and negative effects may coexist in the same person, either simultaneously but in different contexts, or within the same context but in some sort of temporal pattern (McGrath & Beehr, 1990). In part, what is lacking is a model that describes the process by which people can derive positive benefits from stress.
Deviation Amplification Model of Stress and Coping

From Lazarus and Folkman’s (1984) perspective, coping is a process that unfolds over time. But most studies have examined this unfolding process for a single episode of stress, e.g., college examinations (Bolger, 1990; Folkman & Lazarus, 1985) or during the course of an illness (Dunkel-Schetter et al., 1992); none have examined whether episodes across time or contexts are somehow connected. In other words, it is eminently reasonable to assume that, during the process of coping with stress, individuals can add to their coping repertoires and increase their sense of self-esteem and mastery (e.g., Menninger, 1963; Murphy & Moriarty, 1976; White, 1974).

Aldwin and Stokols (1988; Aldwin, 1994a) have developed a deviation amplification model to generate hypotheses about the long-term effects of stress, based in part upon Maruyama’s (1963) modification of systems theory to account for change as well as homeostasis. Maruyama argued that there were two types of processes, deviation countering and deviation amplification. Deviation countering processes typically consist of forms of negative feedback loops that result in homeostasis. In other words, an initial change, such as an increase in blood pressure, is countered by physiological processes that decrease blood pressure, resulting in homeostasis. However, deviation amplification processes typically consist of positive feedback loops that serve to magnify the change. For example, in physiology there are well-documented cascade effects in which initially small changes can become magnified and result in a loss of homeostasis, as when increases in stress hormones can lead to massive decreases in blood pressure which result in an individual going into shock. Note that any change, whether it is good or bad from the standpoint of an outside observer, can result from a deviation amplification process. Thus, deviation amplifying processes can result in either adaptive or maladaptive spirals.

In stress and coping theory, the purpose of coping is traditionally defined in terms of deviation countering mechanisms—decreasing negative affect and solving or managing the problem (e.g., Lazarus & Folkman, 1984), with the implicit goal of returning to baseline functioning as quickly as possible. Much of the literature supports the notion that the effect of stressors on mental and physical health is relatively short lived; the effects of major life events, for example, typically dissipate within a year (DePue & Monroe, 1986), while the effects of hassles are
often gone within a day (DeLongis et al., 1988). Thus, there is much justification for a homeostatic model of coping.

Trauma, however, has been documented to have negative effects that can last for decades (Aldwin et al., 1994; Wilson, Harel, & Kahana, 1989), in part depending upon the type of coping strategies utilized (Ursano et al., 1986; Wolfe, Schnurr, Brown, & Furey, 1994). Further, the effects of coping are not limited to mental or physical health outcomes, but may result either in tangible or emotional gains, as reviewed above. Thus, it is possible to imagine circumstances under which either negative or positive adaptive spirals are generated.

Aldwin and Stokols (1988) hypothesized that certain stressor characteristics may be more likely to lend themselves to either deviation amplifying or countering processes. Stressors that have a rapid onset, cut across domains, and are more severe may be more likely to result in amplifying processes, which result in positive or negative adaptive spirals. In contrast, those that have gradual onsets, less severe consequences, and are restricted to one domain may be more amenable to deviation countering processes, resulting in homeostasis. Whether a particular deviation amplification results in positive or negative spirals is likely to depend upon person characteristics, perhaps best characterized in terms of access to coping resources. For negative spirals, initially low levels of coping resources may contribute to a further depletion of resources (cf. Hobfoll, 1989), which results in increased vulnerability to future stress (cf. Myrdal, 1962; Smith, 1968). However, for positive spirals, high initial levels of resources may result in the development of further resources (Hobfoll & Lilly, 1993), which increase resilience to future stress. Thus, how an individual copes with a problem may result in homeostasis, or a return to prior routines or symptom levels, but may also have long-term consequences, which are hypothesized to be positive or negative, or, more likely, some combination of the two.

Note that this is different from a coping styles approach, which suggests that coping simply reflects personality predispositions. Rather, from this perspective, coping is a process that extends across situations by resulting in general changes in coping resources, such as management skills, and, as such, can affect personality processes such as mastery and self-esteem.1

1. While many trait theorists consider personality to be stable in adulthood (e.g., McCrae & Costa, 1990), a recent review of longitudinal studies (Aldwin & Levenson, 1994) suggests that the average stability coefficient ranges from .4 to .6, which is sug-
Take, for example, a stressor such as job loss. Some individuals have the resources to turn such a situation to their advantage. Those who have resources such as higher levels of mastery and self-esteem, technical know-how, a financial base, and adequate social support may find a new and better position or begin their own company. Other individuals may have vulnerabilities such that a job loss may turn into long-term unemployment with concomitant loss of financial resources, broken marriages, and perhaps the development of substance abuse problems—a typical negative spiral.

Figure 1 illustrates how deviation amplifying processes, either positive or negative, can occur. The top portion of the figure illustrates an adaptive spiral. Individuals with initially high levels of mastery may

---

Further, the coefficients are higher for temperament or trait measures (e.g., Extraversion), than for what we are calling personality processes (e.g., mastery and self-esteem), for which there is considerable evidence for change in adulthood. This is reminiscent of Allport's (1961) early theorizing about personality, in which he differentiated between cardinal, central, and secondary dispositions.
be more likely to use problem-focused coping, which in turn leads to better outcomes and thus increased situational mastery. This situational mastery in turn may generalize to more global feelings of mastery, thereby resulting in increased coping resources. The bottom portion of the figure illustrates a negative adaptive spiral. In this instance, individuals who were initially low in mastery may not cope well with the stressor, for example, by using escapism (e.g., alcohol and drugs), which tend to have poorer outcomes. This may result in lower levels of situation-specific mastery, which in turn may generalize to lower levels of global mastery.

In summary, a deviation amplification model of stress suggests that major stressors and traumas can have long-lasting effects on personality processes such as mastery and self-esteem. The positive effects refer to the development of these coping resources; the negative effects refer to the development of vulnerabilities.

**The Present Studies**

The first step in investigating this model is simply to find out to what extent people draw upon past experiences when coping with current problems. In Study 1, we asked a very preliminary question about this to 845 Normative Aging Study men as part of a larger study on the effect of age on the stress and coping process (Aldwin, Sutton, Chiara, & Spiro, 1996). Responses to the question were content analyzed for the type of problem; presumably, most individuals would draw upon similar prior experiences in dealing with current problems.

The second study examined similar issues using semistructured interviews about recent low points for 96 men and women participating in the Health and Personality Styles Survey (Lachman & James, 1989). We asked whether people perceived long-term effects from this low point and coded these as being primarily positive, negative, or mixed. In addition, we explored whether individuals felt they had benefited from undergoing these low points. We hypothesized that those who perceived advantages would also be more likely to perceive positive long-term effects, and that perceiving positive effects would be associated with positive personality characteristics such as mastery. In addition, we also examined age differences in the development of coping resources. An early study by Finkel and Jacobsen (1977) suggested that younger adults were more likely to perceive benefits from undergoing traumas than were older ones.
Finally, in the third study, we examined the relationships among stress, coping, perceived benefits, long-term effects, and current levels of mastery and depression in a large community sample of 921 college graduates ages 23 to 62, who were participants in the Davis Longitudinal Study. We hypothesized that relatively greater use of instrumental coping would result in more perceived advantages, which in turn would lead to more positive long-term effects, resulting in higher mastery levels and fewer depressive symptoms, while the opposite pattern would be seen with greater use of escapism.

Study 1: The Normative Aging Study

Method

Sample and Procedure

This sample consisted of 845 men, participants in the Normative Aging Study (NAS), a longitudinal study of biomedical and psychosocial factors related to normal aging that has been following a panel of 2,280 men since the mid-1960s. The men were screened for the absence of disease before selection into the NAS and were primarily white, middle-class, community-dwelling veterans (for more information about sample characteristics of the NAS men, see Bossé, Ekerdt, & Silbert, 1984). From 1989 to 1991, when they came in for their triennial physical exam, 1,065 men were asked to participate in an interview on how they coped with stress. Only 2% of the men refused to participate; the present sample consisted of those men who had reported a problem in the past week and who were asked the questions germane to the present study (see Aldwin et al., 1996).

The men ranged in age from 48 to 87 at the time of the interview \( (M = 65.30, SD = 7.55) \). They were divided into four groups, which varied in size due to a disproportionately large sample of middle-aged respondents in the initial phases of the study: mid-life (45 to 54, \( n = 74 \)), later mid-life (55 to 64, \( n = 377 \)), young-old (65 to 74, \( n = 392 \)), and old-old (75+, \( n = 109 \)).

Measures

During the Stress and Coping Interview, respondents were asked to identify and describe the most serious problem they had experienced within the past week. Problems ranged from minor household repairs to the lasting effects of a death of a spouse (see Aldwin et al., 1996). For the purposes of this study, we asked participants to indicate whether or not they drew upon previous stressful experiences to deal with the problem, and to describe these experiences. Content analyses were conducted by two independent raters to determine the types
Table 1
Types of Resources in Studies 1, 2, and 3

<table>
<thead>
<tr>
<th>Resources</th>
<th>NAS a</th>
<th></th>
<th>HAPS b</th>
<th></th>
<th>DLS c</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>None</td>
<td>153</td>
<td>18.1</td>
<td>10</td>
<td>10.3</td>
<td>101</td>
<td>10.8</td>
</tr>
<tr>
<td>Prior similar experience</td>
<td>192</td>
<td>22.7</td>
<td>17</td>
<td>17.7</td>
<td>208</td>
<td>22.3</td>
</tr>
<tr>
<td>Work experience</td>
<td>166</td>
<td>19.6</td>
<td>8</td>
<td>8.3</td>
<td>210</td>
<td>22.6</td>
</tr>
<tr>
<td>Others’ illnesses/deaths</td>
<td>82</td>
<td>9.7</td>
<td>15</td>
<td>15.6</td>
<td>116</td>
<td>12.5</td>
</tr>
<tr>
<td>Parental guidance/others’ examples</td>
<td>69</td>
<td>8.2</td>
<td>25</td>
<td>26.0</td>
<td>195</td>
<td>20.9</td>
</tr>
<tr>
<td>General life experience/aging</td>
<td>94</td>
<td>11.1</td>
<td>6</td>
<td>6.3</td>
<td>417</td>
<td>44.8</td>
</tr>
<tr>
<td>Family</td>
<td>35</td>
<td>4.1</td>
<td>5</td>
<td>5.2</td>
<td>163</td>
<td>17.5</td>
</tr>
<tr>
<td>Military experience</td>
<td>72</td>
<td>8.5</td>
<td>1</td>
<td>1.0</td>
<td>21</td>
<td>2.3</td>
</tr>
<tr>
<td>Childhood problem</td>
<td>57</td>
<td>6.7</td>
<td>14</td>
<td>14.6</td>
<td>61</td>
<td>6.6</td>
</tr>
<tr>
<td>Personality</td>
<td>274</td>
<td>32.4</td>
<td>13</td>
<td>13.5</td>
<td>607</td>
<td>65.2</td>
</tr>
<tr>
<td>Religion/therapy</td>
<td>47</td>
<td>5.6</td>
<td>5</td>
<td>5.2</td>
<td>188</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Note. NAS = Normative Aging Study; HAPS = Health and Personality Study; DLS = Davis Longitudinal Study. Respondents could report more than one resource, so percentages may total > 100.

a. N = 845.
b. N = 102.
c. N = 941.

of resources individuals drew upon to cope with problems. All discrepancies between the two raters were resolved. We also simply summed the number of resources reported (M = 1.45, SD = 1.07).

RESULTS

Surprisingly, 81.9% of the men reported that they had drawn upon a previous experience to help them deal with the current problem. Content analyses yielded 29 different types of resources, which we collapsed into 10 categories. Table 1 lists the percentage of men reporting having drawn upon a particular resource (the percentages add up to more than 100%, as the men could report more than one resource).

While we had expected that the respondents would report drawing upon a prior similar problem, only 22.7% did so. Instead, the men referred to a variety of problems and experiences that had taught them general coping skills, such as work problems (19.6%). Many of the NAS men were policemen or firemen, and volunteered that their jobs had taught them to keep a cool head and solve problems under stress. One
FBI agent who was involved in prosecuting Mafia capos said that he was forced to learn how not to feel any emotions on his job, otherwise the stress would "eat you up." Nearly half of the NAS men were combat veterans, primarily during World War II and Korea (Spiro, Schnurr, & Aldwin, 1994), and 8.5% of the men referred back to combat experiences which were often traumatic. One pilot had been shot down in the Pacific during World War II and spent a night in a lifeboat while a major naval battle raged around him. He had promised himself that if he survived, nothing would ever bother him again, and he said that nothing really did. Another who had an unexpected battlefield promotion during World War II said that he had learned that he could lead men, and lead them successfully in highly dangerous situations, and would refer back to that experience to give him confidence when dealing with work problems.

Sometimes the men referred to coping with serious illnesses or deaths of others (9.7%). "Once you've watched your 20-year-old daughter die of cancer," one man said, "everything else pales in comparison." Others reported on early childhood problems (6.7%), such as death of a parent or experiencing economic hardship during the Depression, which had taught them to be self-reliant and good problem-solvers. A few men referred to generalized coping rules their parents had taught them, or indicated that they had learned from watching others they admired handle difficult situations (8.2%). Some simply stated that they had "mellowed with age" or just learned how to cope through handling many different situations (11.1%).

Surprisingly, though, nearly a third of the men referred to their personality characteristics, attitudes, or philosophy toward life (32.4%) as a resource. Sometimes it was clear that the men were referring to innate temperament ("I've just always been easygoing, even when I was a kid"), while others referred to acquired personality characteristics. For example, one man said that when he was young he used to get angry all the time, but he had learned that it just wasn't worth it to get that upset, and so had taught himself to be calmer. Some said that they had "learned not to sweat the small stuff," referring to their attitudes toward stress, while others launched into elaborate philosophies. Unfortunately, it was not always clear from the interviews whether a trait was innate or acquired, or whether a particular phrase referred to personality, attitudes, or a philosophy of life (e.g., easygoing), so these were combined into one category.

Significant age differences emerged in the tendency to report draw-
ing upon resources, $\chi^2(4, N = 952) = 11.76, p < .01$, with the young-old group being least likely to report this (79.3% vs. 88.1% for the late middle-age group). In addition, there was a weighted linear trend for age groups to differ in the number of resources they reported, $F(1, 841) = 3.00, p = .05$. Scheffe's post hoc range tests revealed no significant differences between the groups. In addition, no significant differences between groups emerged in the types of resources drawn upon.

**DISCUSSION**

In this preliminary study, over 80% of the men reported drawing upon a prior experience in helping them to cope with the present problem. However, in only a fifth of the cases was the experience a prior similar problem. Most men reported drawing upon what Antonovsky (1987) termed "generalized resistance resources," which had taught them self-confidence, general problem-solving abilities, and how to control their emotions or had given them a certain perspective on the relative importance of the problem, which presumably affected their appraisal of the stressfulness of the situation. Nearly a third of the men reported drawing upon their own personalities or general attitudes and philosophies toward stress. It was interesting that many of the respondents felt that they had consciously changed their personalities to make themselves more effective in dealing with problems. However, from this study, it was not possible to determine whether there were actually personality differences or changes as a function of developing these generalized resistance resources. It was also interesting that no consistent age differences were seen in the types of resources drawn upon. However, there were also demographic limitations to this sample, which consisted primarily of middle-aged and older white men. Nonetheless, we found it interesting that the respondents often reported changing as a result of major crises, and thought that the results were intriguing enough to pursue this line of investigation.

**Study 2: Health and Personality Study**

The second study sought to expand upon these earlier findings by doing an in-depth study of people's experiences of an extremely stressful incident in their lives. We were curious about whether people in a crisis situation also drew upon prior experiences, and, more impor-
Coping Resources in Adulthood

Important, whether they perceived long-term effects from having undergone these experiences. Given prior (primarily anecdotal) research reviewed in the overall introduction, we expected people to report changes in self-confidence and mastery, values, and specific coping skills, but the percentage of people reporting these long-term effects was unknown. We were also curious as to whether the age at which people underwent these crises affected the results. Given that the nature of stressors systematically varies with age (with bereavement becoming more frequent; Aldwin, 1991), it is possible that the types of events younger individuals face (e.g., choosing careers, mates) may be more amenable to being able to learn new things and derive advantages. On the other hand, there may also be developmental effects. Parker and Aldwin (1994) examined two cohorts of college graduates and showed that mastery level increases between the ages of 20 and 30, regardless of cohort. This suggests that younger people may derive more benefit than older ones. Finally, we examined the extent to which perceived differences in long-term effects were differentially associated with personality characteristics; presumably, reporting more positive outcomes should be associated with more positive traits such as self-confidence.

METHOD

Sample and Procedure

For the second study, we conducted 102 semistructured interviews with 47 men and 55 women who were participants in the Health and Personality Styles (HAPS) Survey (see Lachman & James, 1989). The sample was obtained from the membership lists of four economically diverse centers in the largest Health Maintenance Organization (HMO) within the Greater Boston Metropolitan area. This study, as a whole, oversampled for older individuals. Participants ranged in age from 24 to 84 ($M = 58.67, SD = 16.74$). Due to missing data, sample sizes varied slightly in the analyses.

Measures

Respondents were asked to describe the high and low points of their lives and to focus upon their most recent low point. Regarding this low point, they were asked (a) whether they were able to draw upon previous experiences to cope with this situation; (b) what things, if any, they felt they had learned; (c) whether there had been long-term effects of the low point; and (d) whether they were able to turn anything to their advantage. We decided to ask about
the types of things learned as well as advantages gained as a way to ascertain which method was most effective in eliciting information about the positive aspects of coping with major stressors. Responses were content analyzed by two independent raters, and differences were reconciled. We coded for type of problem, when it had occurred (young adulthood, mid-life, later adulthood), whether or not there was a long-term effect and what it was (primarily positive, primarily negative, mixed, or ongoing), and types of advantages derived. Number of advantages were summed ($M = 0.72, SD = 0.58$).

Well-being was assessed using the Profile of Mood States Bi-Polar Form (McNair & Lorr, 1984). Respondents were asked to choose from 72 descriptors composing six different mood scales (composed vs. anxious, agreeable vs. hostile, elation vs. depressed, confident vs. unsure, energetic vs. tired, and clear vs. confused) the answer that best described how they had been feeling during the previous week, including that day. Ratings were made using a 4-point Likert scale that ranged from "much unlike this" to "much like this." Personal mastery was assessed using a 7-item index developed by Pearlin and Schooler (1978). Items were rated using a 4-point Likert scale that ranged from "strongly agree" to "strongly disagree." Sample items include "I feel that I have a number of good qualities," and "I feel that I'm a person of worth, at least on an equal plane with others." High scores indicated a higher level of perceived mastery.

**RESULTS**

Respondents reported a variety of low points, including divorces, extended periods of unemployment, death of a child, and so on. They were collapsed into the following seven categories: marital, parenting, work, health, social, bereavement, or political/macrosocial events. While we asked the respondents to focus on the most recent low point for addressing the following questions, many picked problems that had occurred much earlier in their lives, such as being a lawyer at the Nuremberg trials after World War II or problems with children during the turbulent 1960s. For example, parents reported feeling betrayed and bitter when their child joined an ashram, moved in with a boyfriend, or became a carpenter rather than the hoped-for lawyer. Thus, when we examined age differences, we looked at when the problem had occurred in their lives, rather than their current age. We divided participants into three age-at-event groups: young adulthood ($n = 20$), mid-life ($n = 20$), and late life ($n = 57$). Age-at-event differences emerged in the types of problems reported, $\chi^2(3, N = 97) = 26.59, p < .01$. Low points occurring in late life more often dealt with bereavement (22.8%) and
marital (22.8%) situations, including ill health of a spouse. In contrast, the bulk of work (30.0%) and social (30.0%) problems were most frequently reported in young adulthood, while in mid-life, parenting (20.0%) and health (30.0%) seemed to be the sources of important low points.

Similar to the previous study, a surprisingly large proportion of participants (89.7%) reported drawing upon a previous experience to cope with their most recent low point. Content analysis revealed 21 different types of resources represented in this sample. These were collapsed into 10 categories that matched those used in Study 1 (see Table 1). Again, only 17.7% reported drawing upon a prior similar experience. Resources gained through parental guidance or others' examples (26.0%), others' illnesses and/or deaths (15.6%), and childhood problems (14.6%) also proved important. The remainder drew upon prior work experience, general life experience/aging, family, military experience, personality, and religion. Chi squares revealed no significant differences in the types of resources reported according to age at the time of the event.

We were also interested in the extent to which individuals felt that there were long-term effects of having gone through the low point (see Table 2). Only 9.8% of the respondents felt that there were no long-term effects; the rest were roughly equally divided between those whose responses indicated that they felt that the effects were primarily positive (20.6%), primarily negative (20.6%), or mixed (23.5%). Preliminary analyses found few differences between respondents reporting positive effects and respondents reporting mixed effects; therefore, we collapsed these two categories into one (positive/mixed). Unfortunately, we also had to omit the "no effects" group from most of the analyses, because the cell size was so small (10 people) that many of the analyses were invalid due to missing cells. Chi squares revealed no significant age-at-event differences in types of long-term effects.

Next, we examined the specific things that respondents felt they had learned as a consequence of dealing with the low point. We identified 22 different things and collapsed these into six categories. Nearly the entire sample (95.6%) reported that they had learned something from the low point and only five people reported learning nothing. Those who felt they did learn something reported both positive and negative things. For example, a fifth of the sample (20%) reported that they strengthened their coping skills, while over half of the sample (55.6%) reported learning about their own weaknesses, either psychological, physical, or social. In addition, some (17.8%) reported a change in their philosophy
or attitudes toward life, which was sometimes positive, such as an increase in empathy or understanding of others, and sometimes negative, such as a new belief in a "cold, cruel world." Chi squares revealed no age-at-event differences in the ability to learn from experiences or in the types of things learned.

In addition to things learned, we were also interested in the ability of these respondents to derive advantages from their low points (see Table 2). While a third of the sample (31.1%) reported no advantages, 28.9% reported tangible advantages, including increases in coping skills or physical resources. For example, one man's low point was having his apartment building burn down in the middle of a blizzard. This was an incentive for him to work very hard at buying a house for his family—he even shoveled walks so that his realtor could get access to snowed-in properties. Emotional advantages (17.8%) included such gains as an increase in mastery, self-confidence, or self-esteem. Still others reported that, through their experience, they had developed a new philosophy toward life (14.4%).

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Types of Outcomes and % Having Learned and Gained Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HAPS&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Long-term outcome</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>10</td>
</tr>
<tr>
<td>Positive</td>
<td>21</td>
</tr>
<tr>
<td>Negative</td>
<td>21</td>
</tr>
<tr>
<td>Mixed</td>
<td>24</td>
</tr>
<tr>
<td>Ongoing</td>
<td>24</td>
</tr>
<tr>
<td>Learned something</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>86</td>
</tr>
<tr>
<td>Advantages</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>28</td>
</tr>
<tr>
<td>Emotional</td>
<td>16</td>
</tr>
<tr>
<td>Tangible</td>
<td>26</td>
</tr>
<tr>
<td>Philosophical</td>
<td>13</td>
</tr>
</tbody>
</table>

Note. HAPS = Health and Personality Study; DLS = Davis Longitudinal Study. Respondents could report more than one advantage, so percentages may total > 100.

a. \( N = 102 \).

b. \( N = 941 \).
We found age-at-event differences in the ability to derive advantages, \( \chi^2(2, N = 90) = 7.95, p < .05 \). Nearly all (94.7\%) of the group who reported their low point in young adulthood reported deriving some advantage, compared to only 60.0\% of the group who experienced their low point in late life. In particular, those whose event occurred in young adulthood were most likely to derive tangible advantages (57.9\%) compared to 21.8\% for those whose event occurred in the late-life group, \( \chi^2(3, N = 90) = 8.62, p < .01 \), although no age-at-event differences emerged in the extent to which respondents gained emotional or philosophical advantages. As hypothesized earlier, it is possible that the type of problems being faced by older individuals (e.g., bereavement) were less amenable to deriving advantages. Accordingly, we created a dummy variable indicating whether or not the low point was a bereavement and reran these analyses covarying out bereavement. All of the effects of age remained significant; indeed, there was no significant effect of bereavement on the ability to derive advantages. This difference remained significant even when we controlled for whether the low point being dealt with was bereavement.

The number of advantages respondents reported varied by the type of long-term outcome, \( F(2, 87) = 6.51, p < .01 \). Scheffe's post hoc range tests indicated that the number of advantages among those experiencing ongoing problems (.42) significantly differed from the number of advantages reported by those who also reported positive or mixed effects (.91). However, no specific type of advantage was significant, although there was a trend for those who saw positive or mixed long-term effects to report emotional advantages (27.3\% compared to 8.7\% for the ongoing group), \( \chi^2(3, N = 90) = 4.69, p < .10 \).

Finally, we investigated differences between types of long-term effects in personal well-being and sense of mastery. Multivariate analysis of variance (MANOVA), omitting respondents who reported no long-term effects, revealed a slight trend, \( F(S = 2, M = 11.2, N = 38) = 1.60, p = .1 \). Examination of univariate Fs revealed group differences in confidence, \( F(2, 83) = 7.04, p < .01 \), and energy, \( F(2, 83) = 2.8, p < .05 \). Scheffe's post hoc range tests revealed that these differences were only significant between the group experiencing an ongoing problem and the group who derived positive or mixed long-term effects. The former reported lower confidence and energy levels. Analysis of variance (ANOVA) also revealed a trend for differences in mastery, \( F(4, 94) = 2.25, p = .07 \); again, group means were lowest for those currently undergoing a low point.
The results from Study 2 suggest that, in general, people do perceive connections between disparate experiences with stressors. As with the NAS sample, the vast majority of individuals in this study reported drawing upon earlier experiences when dealing with their low points. Again, only a fifth of the sample drew upon prior similar experiences, while the majority reported generalized resistance resources. However, while the distribution of resources was roughly similar to the NAS sample, personality was much less likely to be seen as a resource, while parental guidance was more frequently mentioned.

Looking forward from the event, only 10% of the sample perceived no long-term effects, and 25% could not make that determination, as they were still dealing with the low point. However, more than 50% perceived that the low point had had long-term effects, roughly equally divided between primarily positive, negative, or mixed. Learning something was nearly universal, but it was more difficult to derive actual advantages, although nearly 70% of the sample did report advantages. Interestingly, nearly all of the respondents who reported their low point in young adulthood were likely to have perceived some advantages, compared to only 60% in late life.

Demonstrating differences in personality and mastery between the outcome groups, however, was more difficult. The primary differences found were that people in the middle of a low point reported less confidence, energy, and mastery. However, the sample size was small in this exploratory study, and it was likely that the power was insufficient to adequately test these hypotheses. Nonetheless, the results were once again sufficiently intriguing to warrant further investigation.

**Study 3: Davis Longitudinal Study**

The third study represented a more systematic examination of the issues raised in Study 2. Specifically, we developed a survey based upon the coding system developed in the HAPS study and administered it to a larger sample of college graduates, who ranged in age from young adulthood to mid-life. We were especially interested in how many of these younger adults would self-report positive outcomes of low points, as well as advantages, given that Study 2 suggested that those whose event occurred in young adulthood were more likely to derive advantages. Further, a larger sample size would allow us to conduct more
in-depth and sophisticated analyses, examining mediators of positive and negative outcomes, as well as their long-term effects.

In particular, we were interested in what factors were associated with differential perceived outcomes and whether a deviation amplification model of this process could be demonstrated using path analysis. An earlier path analysis by Aldwin (1991) showed that the effect of stress on mental health was in part mediated through coping processes; specifically, instrumental action decreased psychological symptoms and escapism increased them. Therefore, we hypothesized that individuals who used instrumental action in coping with their low point would be more likely to have positive outcomes, which in turn would lead to higher levels of mastery and thus less depression. The opposite pattern was hypothesized to hold for escapism; these individuals should have more negative outcomes and thus lower levels of mastery and higher levels of depression.

**METHOD**

**Sample and Procedure**

Based upon the information gained from Study 2, we surveyed participants of the Davis Longitudinal Study (DLS), an ongoing study of alumni of the University of California, Davis, from three cohorts: 1969, 1979, and 1989. The initial sample consisted of 1,054 respondents who ranged in age from 23 to 62 ($M = 37.5, SD = 7.89$) (for more information about sample characteristics see Parker & Aldwin, 1994, in press). The present sample consists of 941 respondents (435 men and 506 women) who reported on a low point and/or had no missing data in the study. Ten percent of the sample self-identified as minorities, primarily Asian American.

**Measures**

This survey included a list of 32 low points, derived from content analyses of the interview responses in Study 2. Respondents were asked to indicate which of these events they had experienced at any time in their lives. Next, they were asked to focus on their most recent low point and indicate when it happened. Most events had happened within the past 2 to 3 years ($M = 2.45, SD = 3.52$), although for a few individuals the event occurred as many as 23 years earlier. Thus, the sample was divided into three age-at-event groups: 20 to 29 ($n = 272$), 30 to 39 ($n = 271$), and 40 to 49 ($n = 388$), based upon their age at the time of their most recent low point. Respondents were also asked to rate the stressfulness of the most recent low point, using a 7-point Likert-
type scale (1 = not at all stressful, 7 = most stressful thing ever experienced; $M = 5.44, SD = 1.19$).

Coping was assessed using the California Coping Inventory (Aldwin, 1994b), which was designed to have a balance of positive and negative strategies. The 50 items are rated on a 4-point scale indicating frequency of use (0 = not at all, 3 = used a lot), which are divided into seven subscales. For purposes of this study, we focused on two scales, instrumental action and escapism, both of which were divided by coping effort (e.g., sum of all items) to determine the relative proportions of use of instrumental action and escapism (see Vitaliano, Russo, Carr, Maiuro, & Becker, 1985). This is especially important in examining extremely stressful events, as stress levels are positively associated with both coping effort and emotional distress, which can confound the relationship between coping and outcomes.

Respondents were then asked if they could turn any part of this situation to their advantage, and were presented with a list of four options: (a) no, (b) emotional well-being (e.g., pride, satisfaction), (c) tangible advantage/gain (including new coping skills), and (d) developed a new philosophy/attitude toward life. Number of advantages were summed ($M = 1.22, SD = .95$). In addition, respondents were asked “What, if anything, do you think you learned from going through this low point?” The 15 items were grouped into four categories: values, resources, vulnerabilities, and coping skills. For both questions, respondents could circle as many items as they felt were applicable. Respondents were asked about long-term effects, and selected from four options: none, primarily positive effects, primarily negative effects, and both positive and negative effects. Respondents were considered to be coping with an ongoing problem if they indicated there were no long-term effects but stated on an earlier question that they were still dealing with the aftermath of the problem. Finally, respondents were asked to indicate any special experiences, strengths, or abilities that they drew upon that helped them manage the problem by selecting from a list of 14 items, which again were aggregated to match the 11 areas assessed in Studies 1 and 2.

Two outcome measures were used. General mastery was assessed using Ryff’s (1989) 14-item version of the environmental mastery scale, which we felt was particularly appropriate for use in educated samples of adults. Each item is scored on a 6-point scale, ranging from 1 = strongly disagree to 6 =

2. For comparison and generalizability’s sake, we combined two of the California Coping Inventory’s subscales, avoidance and self-isolation, into one escapism scale to make this coping measure more similar to those used in previous research. Inspection of the items shows that these two components typically load together on scales like the Ways of Coping (Folkman & Lazarus, 1980). The two subscales each correlated at .34 with depression, and the internal reliability was improved by combining the two scales (from slightly less than .6 to .68).
strongly agree. Sample items include “I am quite good at managing the many responsibilities of my daily life”; “My daily life is busy, but I derive a sense of satisfaction from keeping up with everything”; and “I often feel overwhelmed by my responsibilities.” A summary scale was generated by adding the items, reversing negative items. High scorers possess a sense of mastery and competence in managing the environment while low scorers tend to have difficulty managing their everyday tasks ($M = 64.57$, $SD = 11.04$). This scale has been shown to have strong internal consistency (alpha = .90) and test-retest reliability ($r = .81$) (Ryff, 1989). In this sample, the internal reliability coefficient was .87.

Finally, depression in the past week was assessed using an 11-item form (Kohout, Berman, Evans, & Cornoñi-Huntley, 1993) of the Center for Epidemiologic Studies Depression Scale (Radloff, 1977), a self-report scale designed to measure depressive symptomatology in the general population. The 11 items are rated on a 3-point scale (0 = hardly ever or never, 2 = much or most of the time; $M = 4.07$, $SD = 3.19$). The short version of this scale has psychometric properties that are virtually identical to those of the 20-item version (Kohout et al., 1993). In this sample, the internal reliability coefficient was .77.

**RESULTS**

**Age Group Differences**

Most of the low points reported fell into three categories: marital (24.7%), work/education (23.5%), and bereavement (18.4%). There were differences in type of low point by age, $\chi^2(3, N = 941) = 71.62$, $p < .001$. Inspection of the marginals suggested that those in their 20s most frequently reported work/education (30.3%) and bereavement (19.3%) low points, while marital/relationship low points were reported most frequently by those in their 30s (30.3%). Those in their 40s were also most likely to report marital/relationship low points (25.9%), and they were the highest of all the groups in reporting parenting-related low points (11.5%), which included illness or death of a child, as well as childlessness.

Similar to the two previous studies, a majority of the DLS sample reported having drawn upon a previous experience to cope with their most recent low point (89.1%). Of these, only 22.3% drew upon similar experiences (see Table 1). Interestingly, 65.2% of the sample drew upon personality and 44.8% reported drawing upon general life experience/aging. Very few people reported military experiences (2.3%) or childhood problems (6.6%) as a resource. A series of Bonferroni-
corrected \( p < .0045 \) chi squares revealed relatively few differences in resources with age at event. The youngest group was least likely to report general life experience (33.9\%) and family as a resource, especially compared to the oldest group—52.1\% and 22.1\%; \( \chi^2(3, N = 941) = 21.37 \) and 30.50, respectively.

As with Study 2, nearly all (88.2\%) of the respondents reported long-term effects from undergoing the low point. However, the DLS sample was more likely to self-report both primarily positive (28.2\%) and mixed outcomes (46.1\%), with concomitantly fewer primarily negative outcomes (9.0\%; see Table 2). There were no significant differences by age in type of long-term effect, \( \chi^2(3, N = 941) = 0.42 \), \( \text{ns} \).

Similarly, nearly all respondents reported learning something from the low point (98.2\%). Further, in response to our inquiry, 79.4\% of respondents reported that they were able to turn some aspect of the problem to their advantage. For instance, almost half of the sample (46.6\%) reported developing a new philosophy or attitude toward life, 38.8\% said they had derived tangible advantages, and 25.3\% reported emotional advantages. No significant age-at-event differences emerged in the types of advantages gained, with the exception of developing a new philosophy or attitude toward life, \( \chi^2(N = 941) = 9.17 \), \( p = .01 \). More than half of the respondents in their 20s (51.5\%) reported this advantage compared to 40.7\% of respondents in their 40s.

**Associations with Long-Term Outcomes**

A series of Bonferroni-corrected \( p < .0045 \) chi squares revealed that there were differences in the types of resources drawn upon by the outcome groups (see Table 3). About a quarter of those who had either no or negative long-term effects did not report drawing upon any resources. In contrast, nearly a quarter of those with positive or mixed outcomes could draw upon experiences from work and religion/therapy; over two-thirds of these groups reported drawing upon their own personalities or inner strengths as resources.

The number of advantages derived also varied by type of long-term outcome, \( F(4, 936) = 49.72, p < .001 \). Scheffe’s post hoc range test \( (p < .05) \) showed that those reporting primarily positive and mixed outcomes reported significantly more advantages (1.69 and 1.23) than those reporting negative, no effects, or that the problem was ongoing (0.48, 0.69, and 0.72, respectively). Table 4 shows the type of advantages by long-term effect. Over half of the negative and no effects groups re-
Table 3

% Indicating Resource by Type of Long-Term Effect

<table>
<thead>
<tr>
<th>Resource</th>
<th>None</th>
<th>Positive</th>
<th>Negative</th>
<th>Mixed</th>
<th>Ongoing</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>26.1</td>
<td>4.5</td>
<td>24.7</td>
<td>7.4</td>
<td>19.6</td>
<td>63.14*</td>
</tr>
<tr>
<td>Similar experience</td>
<td>24.3</td>
<td>21.1</td>
<td>10.6</td>
<td>23.5</td>
<td>28.3</td>
<td>8.54</td>
</tr>
<tr>
<td>Work</td>
<td>18.9</td>
<td>28.7</td>
<td>5.9</td>
<td>22.8</td>
<td>26.1</td>
<td>20.35*</td>
</tr>
<tr>
<td>Death</td>
<td>5.4</td>
<td>13.2</td>
<td>5.9</td>
<td>15.2</td>
<td>10.9</td>
<td>11.70</td>
</tr>
<tr>
<td>Parental guidance</td>
<td>13.5</td>
<td>23.8</td>
<td>10.6</td>
<td>23.7</td>
<td>15.2</td>
<td>13.44</td>
</tr>
<tr>
<td>General life experience</td>
<td>30.6</td>
<td>49.1</td>
<td>34.1</td>
<td>48.2</td>
<td>37.0</td>
<td>17.99</td>
</tr>
<tr>
<td>Family</td>
<td>10.8</td>
<td>20.4</td>
<td>9.4</td>
<td>20.0</td>
<td>10.9</td>
<td>12.07</td>
</tr>
<tr>
<td>Military</td>
<td>5.4</td>
<td>1.5</td>
<td>1.2</td>
<td>1.8</td>
<td>2.2</td>
<td>6.76</td>
</tr>
<tr>
<td>Childhood problems</td>
<td>2.7</td>
<td>7.2</td>
<td>3.5</td>
<td>7.6</td>
<td>6.5</td>
<td>4.95</td>
</tr>
<tr>
<td>Personality</td>
<td>51.4</td>
<td>73.2</td>
<td>54.1</td>
<td>67.1</td>
<td>47.8</td>
<td>28.05*</td>
</tr>
<tr>
<td>Religion/therapy</td>
<td>12.6</td>
<td>28.3</td>
<td>8.2</td>
<td>20.3</td>
<td>10.9</td>
<td>24.89*</td>
</tr>
</tbody>
</table>

*Bonferroni-corrected \( p < .0045 \).

Table 4

% Indicating Advantages by Type of Long-Term Effect

<table>
<thead>
<tr>
<th>Advantage</th>
<th>None</th>
<th>Positive</th>
<th>Negative</th>
<th>Mixed</th>
<th>Ongoing</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>56.8</td>
<td>5.3</td>
<td>57.6</td>
<td>15.7</td>
<td>41.3</td>
<td>160.01***</td>
</tr>
<tr>
<td>Emotional</td>
<td>16.2</td>
<td>43.0</td>
<td>7.1</td>
<td>21.0</td>
<td>15.2</td>
<td>71.01***</td>
</tr>
<tr>
<td>Tangible</td>
<td>15.3</td>
<td>54.7</td>
<td>10.6</td>
<td>42.2</td>
<td>15.2</td>
<td>95.72***</td>
</tr>
<tr>
<td>Philosophical</td>
<td>33.3</td>
<td>59.6</td>
<td>17.6</td>
<td>48.8</td>
<td>30.4</td>
<td>60.28***</td>
</tr>
</tbody>
</table>

***\( p < .001 \).

ported no advantages, in contrast to only 5.3% and 15.7% of the positive and mixed groups, respectively, who were most likely to report tangible and philosophical advantages derived from this low point.

There were also differences among outcome groups in the perceived stressfulness of the problem, \( F(4, 936) = 17.53, p < .001 \). Scheffe's post hoc range tests \( (p < .05) \) showed that those with no long-term
effects or with an ongoing problem rated their problem as less stressful ($M = 4.79$ and $4.89$, respectively) than primarily positive, negative, or mixed groups ($M = 5.34, 5.66$, and $5.74$, respectively). Although the primarily negative outcome group reported the highest ratings, on average they were not significantly different from the positive or mixed groups.

There were also differences in coping strategies among outcome groups for both instrumental action and escapism, $F(4, 936) = 18.36$ and $14.48$, $p < .001$. Scheffe’s post hoc range tests ($p < .05$) showed that the primarily positive groups were more likely (and primarily negative less likely) to use instrumental action than those with no or mixed effects. Those with primarily negative or no long-term outcomes were more likely to use escapism than were the positive and mixed groups, while those with primarily positive outcomes were significantly lower on escapism than even the mixed group.

Finally, there were also significant differences between outcome groups for both mastery and depressive symptoms, $F(4, 936) = 12.32$ and $14.75$, $p < .001$, respectively. Interestingly, those with either no effects or primarily positive ($M = 68.13$ and $66.57$, respectively) were highest on mastery, and those with primarily negative effects were lowest ($M = 58.91$) and most likely to significantly differ from the other groups, as shown by Scheffe’s post hoc range tests ($p < .05$). The opposite pattern was seen for depression, with those with no or positive effects reporting the lowest levels ($M = 2.82$ and $3.44$, respectively), while those with primarily negative effects had the highest levels ($M = 5.62$), which were not significantly different from those currently undergoing a low point ($M = 5.43$).

**Deviation Amplification Model**

We used GEMINI (Wolfe & Ethington, 1985) to create a heuristic model of the stress-related deviation amplification process hypothesized earlier, in which stress is hypothesized to have two different outcomes: either the development of coping resources or the development of vulnerabilities. Basically, our model specifies that during stressful episodes instrumental action would lead to perceiving positive long-term outcomes, which in turn should lead to higher mastery and thus lower depressive symptoms. The opposite pattern should hold true for escapism. However, a model with all paths in it was initially computed; nonsignificant paths were then eliminated and the model recomputed.
Coping Resources in Adulthood

The path analysis yielded a model which accounted for 36% of the variance in current depression, $F(5, 395) = 104.46, p < .001$. Figure 2 depicts the significant ($p < .05$) paths from stress through depression. The bold lines indicate the primary deviation amplification model (i.e., positive betas representing positive feedback processes). Stress, escapism, and negative outcomes were weakly and positively associated with depression. Stress was also weakly and positively associated with the use of escapism, which in turn was positively associated with negative outcomes, which in turn was positively associated with depression, resulting in a significant indirect path from stress to depression, $t(941) = 2.94, p < .001$. While stress was negatively associated with instrumental action, the use of this strategy was positively associated with both positive outcomes and mastery. Overall feelings of mastery, in turn, were strongly associated with current levels of depression. It was also interesting to note that instrumental action was inversely related to negative outcomes, while escapism was inversely related with positive outcomes.

3. Note that all of the indirect paths were significant.
DISCUSSION

In sum, the results found in the DLS sample were very similar to those found in the prior two studies, in that the overwhelming majority of respondents drew upon earlier experiences and perceived some positive long-term outcomes from their low points. Although there were differences in type of low point by age, there were few differences in resources or advantages, and no age differences in outcomes. However, Study 3 expanded on the findings by examining the covariates of long-term outcomes. Those who perceived the long-term outcome of their low point to be primarily positive were more likely to draw upon past experience. As predicted, they used more instrumental action and less escapism and were more likely to report deriving advantages from their low point. They also reported higher current levels of mastery and lower levels of depression. The opposite pattern was reported by those who perceived their outcomes as primarily negative, but there were no differences in stress ratings of the low point.

However, there was a small group who perceived no long-term effects, rated the problem as less stressful, was less likely to draw upon resources, and was higher in mastery than the other outcome groups. Perhaps this group's high mastery levels protected it from long-term effects, or perhaps this group was simply composed of repressors.

Path analysis supported a deviation amplification model, in which stress could result in both positive and negative outcomes, depending upon intervening processes. Those who used instrumental action were more likely to perceive primarily positive outcomes of their low point, which in turn increased their feelings of mastery, while those who used escapism were more likely to have negative outcomes, which increased their feelings of depression.

While the results make intuitive sense, it is important to note that this study is cross-sectional and thus causal directionality cannot be ascertained. It is quite possible that feelings of mastery and depression may be driving the recollections of the event and its stress rating, and also coloring perceptions of positive and negative outcomes.

GENERAL DISCUSSION

Summary of Findings

We examined successive versions of a developmental amplification model in three highly disparate samples: middle-aged and older men
Coping Resources in Adulthood

(NAS), a life-span sample of men and women (HAPS), and young adult to middle-aged college graduates (DLS). The results were markedly similar across these nearly 2,000 men and women of all ages. It was clear that individuals perceive continuity across stressful situations. In all samples, between 80% and 90% reported drawing upon a prior experience in helping them to cope with the current problem. However, despite our best efforts in interviews to focus individuals on the specific stressful episodes that served as resources, only about a fifth of each sample reported on a prior similar experience; many reported on what Antonovsky (1987) termed “generalized resistance resources,” such as general confidence, self-esteem, or perspectives drawn from successfully coping with prior stressors, including those in childhood (e.g., parental bereavement). Surprisingly, personality was perceived as a resource, although the exact figures varied by the sample. Some individuals volunteered that their disposition kept them calm during stress; others mentioned learning to change their personality so that stress would not affect them as much.

It was also clear that the overwhelming majority (approximately 90%) of both samples (HAPS and DLS) that reported on serious low points in their lives perceived long-term effects from having had those difficulties. What was surprising was that so few saw the effects as primarily negative. In the HAPS interviews that we coded, 20% were judged to have primarily negative long-term effects, and a quarter were mixed. In the DLS, which relied on self-report data, only 9% perceived primarily negative effects; nearly half thought they were mixed.

We found it more useful to ask people if they could turn any part of the situation to their advantage than if they had learned anything, as over 95% of both samples reported that they had learned something (although, of course, this was not always positive). Fewer people, although still the majority, reported that they could turn these often terrible episodes to their own advantage. Initially, the interviewers on the HAPS were hesitant to ask this question, believing it to be insensitive under certain circumstances (e.g., death of a child). However, even these individuals could sometimes report on advantages gained, such as increased personal strength.

Although the type of stressor varied by age, as is to be expected, there were surprisingly few age differences in types of resources or in long-term outcomes. There was, however, some suggestion in the HAPS study that people whose events occurred in young adulthood were more likely to derive advantages from coping with stress than were
old adults—especially in changing their attitudes or philosophy toward life. However, this age difference did not replicate in the DLS sample, which had a more restricted age range (20s to 40s) and a homogeneous education level (all college educated).

Long-term effects did not vary by type of situation; rather, available resources and coping strategies were more important covariates. People who perceived primarily negative long-term effects were less likely to draw upon a resource, successfully turn the situation to their advantage, and use instrumental action, and were more likely to use escapism. On the other hand, people who perceived primarily positive (or mixed) long-term effects were more likely to draw upon a resource (especially work experiences, their own personality, and religion), were more likely to use instrumental action than escapism as coping strategies, and could turn the situation to their advantage. This was true even though there were no significant differences between these groups in the appraisals of stressfulness.

The individuals who did not perceive long-term effects from low points were a small but interesting group. They appraised their low point as less stressful and had higher levels of mastery. It is unclear from this study whether these people were simply very competent people who routinely take things in stride, repressors, or individuals who were able to avoid extremely challenging problems, for whatever reason.

Limitations of the Studies

Although the samples were disparate, none of them could be said to be representative. The NAS sample consisted of older white males, the HAPS sample consisted of people enrolled in an HMO, and the DLS sample consisted of college-educated young adults, only 10% of whom were minorities. Thus, generalizations to more representative samples, and particularly those including higher percentages of minorities and older women, should be viewed with caution.

A major limitation was that all of the studies were cross-sectional; thus, causality/directionality cannot be determined. As mentioned earlier, it is quite likely that current feelings of mastery and depression colored individuals’ appraisals of the stressors and their outcomes. In addition, some of the situations happened many years earlier, and the accuracy of these individuals’ memories must be questioned. Further, from these data sets, there really is no way of differentiating between “real” benefits and Taylor’s construct of “positive illusions” (Taylor &
Brown, 1988), or simple cognitive reappraisal as a means of dissonance reduction. However, in another study in which we were able to control for response style and concurrent psychopathology, the paths from stress to positive outcomes to decreased symptoms still held (Aldwin et al., 1994). This pattern of results is also supported by Affleck and his colleagues’ (1987, 1991) longitudinal research, which did find more objective outcomes (longevity in myocardial infarction patients and developmental level in infants who had been premature) when benefits could be derived. In part, from a deviation amplification or adaptive spiral perspective, some degree of circularity is expected. Those who have more resources may be likely to develop even more resources after coping with difficult circumstances, and vice versa (Hobfoll & Lilly, 1993). Indeed, Taylor and Brown (1994) suggest that positive illusions may play a role in the development of positive outcomes of highly stressful situations.

Toward a Transactional Model of Personality

From the standpoint of Big Five theorists (e.g., Goldberg, 1993; McCrae & Costa, 1990; McCrae & John, 1992), personality is perceived as highly stable and as the source of coping strategies, which, after all, came under close study primarily in the effort to understand individual differences in reactions to stressors. From the standpoint of theories of adult development, however, the question is not “Is personality stable?” but rather “What changes, under what circumstances, and how much?” (Lachman, 1989). Indeed, developmental changes in ego processes in adulthood have long been assumed, although how such changes occur have usually not been well delineated. Loevinger (1977) does not address this issue, and Erikson (1950) speaks vaguely of the resolution of developmental crises. Vaillant (1993) has addressed possible mechanisms for changes in the ego (i.e., the development of “mature” defensive styles), including nervous system maturation and learning, but opts for the unconscious assimilation of the positive aspects of significant others rather than deriving benefit from experience.

How can the gap between these two stances, personality as stable and personality as malleable, be bridged? This topic has been a major source of debate in the field for the past few years, and space does not permit a review of all of the various arguments (see the edited volume by Funder, Parke, Tomlinson-Keasey, & Widaman, 1993). However, a reasonable approach might be to return to Allport’s (1961) early con-
ceptualization of personality, which differentiates between cardinal, central, and secondary dispositions, or, in more modern terms, between personality traits and personality processes. As Allport (1955) said, "In psychology the problem of becoming is intertwined with the problem of structure; for process leads to product" (p. 88). It is reasonable to assume that personality traits such as extraversion may be quite stable, but personality processes, such as mastery and self-esteem, may be more malleable. Nonetheless, the two may inform each other. Indeed, as Caspi, Bem, and Elder (1989) have suggested, the tendency is for stability rather than change, and personality processes may well tend to reinforce general personality traits under most circumstances. However, under conditions of high stress, personality processes may be forced to change, which in turn may modify what are usually the more stable personality traits.

As mentioned earlier, adult developmental theorists have been rather vague on the process of change, but clinicians examining the effects of trauma on personality have been much clearer. Epstein (1991) has referred to trauma as the "atom-smasher" of personality research, as changes in personality processes are clearly evident as individuals struggle to create a new meaning for their lives. In part, major stressors can force individuals to develop self-knowledge (Beardslee, 1989), as old assumption systems and forms of adaptation fall short and new ones must be developed. Such change is never easy, and may be accompanied by a great deal of pain. Indeed, an early study by Finkel (1974) into "strens," or "growth-potentiating experiences," found that a large percentage of strens were actually traumas. As one of his participants wrote, "In fact I cannot see how a stren experience if it is to have an influence on your life, can be devoid of trauma" (Finkel, 1974, p. 268). Under highly stressful circumstances, deviation amplification processes may occur that result in long-term changes in personality—either positive, through the development of resources, or negative, through the development of vulnerabilities, or, in all likelihood, some combination thereof.

What was remarkable from the interviews in this study was the degree to which people struggled to learn and grow in the midst of despair, and the degree to which they perceive their own personalities as malleable. While we have no evidence that individuals actually changed their personality, this supports a longitudinal study by Park et al. (1996), in which individuals who used growth-oriented coping in a stressful situation showed increases in optimism and mastery. We also suspect that
mental health lies in the ability to perceive and activate resources, both internal and external, when faced with challenging problems. While some people clearly have more tangible resources that help them cope with problems (such as financial resources), the respondents in these three studies appeared to vary in their ability to perceive resources and advantages in stressful situations in the interviews. The source of this individual difference is not clear, although it is likely to correspond to factors contributing to resiliency in children, namely, intelligence, "easy" dispositions, and social support (Werner & Smith, 1992).

**Future Research**

The results from these studies should be considered preliminary, and replication is needed in other samples. There are a host of ancillary questions concerning the "natural history" of stress and personality change. If change does occur, how long does it last? For whom is the change permanent, and for whom is change transient? In addition, more reliable ways of assessing and differentiating between positive illusions, cognitive reappraisal, denial, and actual change are needed. Studies utilizing validating reports from significant others would be helpful, as well as more longitudinal research demonstrating the long-term effects of perceived benefits of stress on physical and mental health and research on the hypothesized changes in personality processes.

**REFERENCES**


Coping Resources in Adulthood


This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.