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REPORT NO. 89-3

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Accession For	
NTIS GRA&I	☒
Full Text	☐
Unpublished	☐
Classification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

*Report No. 89-3 was supported by the Naval Medical Research and Development Command, Navy Medical Command, Department of the Navy, under Research Work Unit MR04101.00A-6004. The views presented are those of the authors and do not reflect the official policy of the Department of the Navy, Department of Defense, nor the U. S. Government.

SUMMARY

Military personnel frequently face stresses which may affect morale, health, and performance. These stress effects may depend heavily on psychological attributes of the individual, including personality characteristics and coping style. Models characterizing the effects of psychological attributes on morale, health, and performance require accurate understanding of relationships between different psychological determinants of these important outcomes. The present study examined personality-coping style associations as part of a program to understand psychological adjustment to stress and its effects on performance-related outcomes in training and operational settings.

Two samples of recruits entering Navy basic training completed a standardized personality inventory measuring: (a) Neuroticism, the tendency to experience negative emotions and have difficulty dealing with stress; (b) Extraversion, the tendency to be outgoing, a leader, like social interactions, and have predominantly positive emotions; (c) Openness, the tendency to actively seek out new ideas and experiences; (d) Conscientiousness, the tendency to be organized and methodical rather than sloppy and undependable; and (e) Agreeableness, the tendency to be trusting and open with others in contrast to cynical and skeptical.

The recruits also completed a standardized coping inventory describing how they dealt with the experiences of their first week in recruit training. Six coping scales constructed from this inventory were employed in the study: (a) Positive Reappraisal, the tendency to look for positive gains from the demands of basic training; (b) Problem Solving, the tendency to analyze problems and attempt to implement plans to deal with those problems; (c) Seeking Social Support, the tendency to ask for help from other people; (d) Escape, the tendency to daydream and wish problems would go away; (e) Self-blame, the tendency to see one's self as the source of problems; and (f) Minimization, the tendency to control emotional expression and its effects on behavior.

Each coping scale except Minimization was related to at least one personality dimension. The strongest bivariate correlations were Conscientiousness with Positive Reappraisal (.39) and Problem Solving (.44) and Neuroticism with Escape (.37), Self-Blame (.26) and Problem Solving

(-.26). The remaining personality dimensions were weak correlates of coping after controlling for Neuroticism and/or Conscientiousness.

Conscientiousness was related to a problem-solving orientation to stress, while Neuroticism was related to negative self-evaluation and wishful thinking in response to stress. Given evidence from other research that personality traits are stable over time and across situations, while coping efforts tend to change over time and situation, models to predict stress effects may be most effective if they use personality trait measures to predict long-term trends in outcomes and coping measures to predict the dynamics of adjustment to and performance in a specific situation. These principles should apply to attempts to predict or model performance of military personnel in a wide variety of stressful situations.

INTRODUCTION

Coping, broadly defined as mental and behavioral adjustments to demanding situations, provides an important conceptual basis for understanding how demanding situations affect psychological and, perhaps, physical well-being (Coelho, Hamburg, & Adams, 1974; Lazarus & Folkman, 1984). General personality constructs, such as neuroticism, represent an alternative conceptual framework for defining behavioral attributes relevant to well-being (Costa & McCrae, 1980; Costa & McCrae, 1984; Friedman & Booth-Kewley 1987; Diener, Larsen, Levine, & Emmons, 1985). The relationship between these alternative articulations of the psychological determinants of well-being has been investigated only sporadically (e.g., McCrae & Costa, 1986; Rim, 1986; Costa & McCrae, in press; Carver, Scheier & Weintraub, 1989; Clark & Hovanitz, 1989), perhaps because of the apparent contrast between personality traits which are stable over long periods of time encompassing many different life situations (Conley, 1984; Costa & McCrae, 1988; Leon, Gillum, Gillum, & Gouze, 1979; Helson & Moane, 1987) and coping styles which are influenced by situational factors (Pearlin & Schooler, 1978; Folkman, Lazarus, Dunkel-Schetter, & Gruen, 1986; McCrae, 1984) and which change over time within situations (Folkman & Lazarus, 1985). These differences do not preclude systematic relationships between coping and personality, and elaboration of personality-coping relationships can provide a richer theoretical framework for understanding psychological determinants of well-being. The present paper demonstrates this potential by examining personality-coping relationships in two samples of young men undergoing military basic training.

The argument that important personality-coping associations exist assumes that personality is expressed in choices. Just as personality is expressed by choices between behavioral settings (Gormly, 1983), personality can be expressed by choices made between alternatives defined by the behavioral setting (Monson, Hesley, & Chernick, 1982). In the case of coping, the situation (Pearlin & Schooler, 1978) and the specific type of stress involved (McCrae, 1984; in press) may restrict the range of available coping choices, but such restrictions will rarely eliminate alternatives completely. To the extent that options remain, the individual can express preferred or habitual adaptive behaviors that are integrated parts of their personality. Thus, one manifestation of personality-based choices will be

differences in the method(s) of coping chosen in response to the combination of demands and constraints imposed by a given situation. Carver, et al. (1989) have presented a similar view of the relationship between personality and coping.

The proposal that personality influences the choice of coping mechanisms within situations is consistent with current coping theory. Most recent coping research focuses implicitly or explicitly on models akin to Lazarus and Folkman's (1984) transactional process model of coping. Although that model and the associated research emphasize the influence of the situation and the temporal stage of adjustment to situational demands as determinants of coping, the most extensive theoretical statement of the appraisal model acknowledges that " . . . there is both stability and change in coping . . ." (Lazarus & Folkman, 1984, p. 130) and that attributes of the individual can act as constraints on the use of different types of coping (Lazarus & Folkman, 1984, pp. 165-166). Personality variables may form one set of individual difference constraints on coping.

Despite the acknowledged potential for individual differences to influence coping, research deriving from the transactional process model typically has given little attention to personality as a determinant of coping. This tendency presumably is an outgrowth of the fact that the original formulation of the transactional model was developed, in part, in response to the perception that prior coping research put too much emphasis on coping as a trait and gave too little attention to situational and temporal determinants of coping. One criticism of trait approaches was that trait coping measures were poor predictors of state coping measures. This criticism echoes Mischel's (1968) general critique of personality traits, but that critique may have been biased by the failure to allow for methodological limitations of the studies cited as support (Hogan, DeSoto & Solano, 1977; Eysenck, 1981). Subsequent research has indicated that such criticisms may be misleading when appropriate behavioral aggregates are used as criteria (Epstein, 1983; Kenrick & Funder, 1988) and situational constraints (Monson, et al., 1982) are taken into account. These findings quite likely can be generalized to coping. A second argument against trait models of coping was that unidimensional trait measures such as repression-sensitization (Byrne, 1964), repression (Welsh, 1956), and ego strength (Barron, 1953) were poor representatives of complex coping processes. This

criticism is legitimate, but simplicity is not necessarily characteristic of trait measures as evidenced by more complex trait assessments of coping (Haan, 1963; Joffe & Naditch, 1977; Finney, 1965).

Given the foregoing considerations and recent evidence that individual differences in coping are at least moderately stable over time (Felton & Revenson, 1984; Solomon, Mikulincer, & Avitzur, 1988; Carver, Scheier & Weintraub, 1989; McCrae, in press), it is reasonable to give more consideration to the role of personality traits in relation to coping. A better understanding of coping, particularly the flexibility of coping, a characteristic which logically is important for adaptation to stress, may be achieved by detailing the individual differences that influence coping. The issue of flexibility arises, because preferred, habitual patterns of behavior may affect the choice of one type of coping over another, or determine how extensively a person uses a given mechanism, or both. These influences, if strong enough, could mean that an individual employs less than optimal coping behaviors in a given situation, because he or she relies on habitual coping style rather than adapting to the specific requirements and constraints of the immediate situation. In other words, personality may define constraints on coping processes that limit adaptive flexibility.

Well-defined personality-coping associations also have ramifications for personality theory and measurement. If coping is a constrained process influenced by the type of stress, demonstrating that personality variables predict coping behaviors within a specific situation can help understand the psychological processes that translate stable personality attributes into states which, cumulatively, define well-being. Specific coping styles may emerge as important elements of personality constructs which should be considered in the definition and measurement of those constructs. This possibility has been suggested previously by Shapiro's (1965) description of neurotic styles, but current measurement models for personality generally give limited attention to this potentially important element of personality.

Given that both coping and personality theory could benefit from additional study of personality-coping associations, the problem is to define and implement appropriate strategies for studying these associations. The proposition that personality influences choice of coping mechanisms within a given situation makes it critical to study individuals facing as nearly identical a situation as possible. This strategy also should be maximally

effective in identifying the influence of personality on coping, because it restricts the variance attributable to situational factors (Golding, 1975). However, the strategy will be effective only if the situation is sufficiently demanding to activate coping mechanisms (Erickson & Pierce, 1968). According to transactional process theory, this requirement is equivalent to asserting that the situation must be stressful (Lazarus & Folkman, 1984).

Military basic training is a suitable setting for testing the hypothesis of interest. This situation is highly standardized and presents recruits with a number of significant adaptational demands (Bourne, 1967; Maskin & Altman, 1943; Janis, 1945; Zurcher, 1968). These demands produce reliable evidence of affective arousal during the most demanding period (Datel & Engle, 1966; Datel, Engle & Barba, 1966; Datel, Giesecking, Engle, & Dougher, 1966; LaRocco, Ryman, & Biersner, 1977), thereby suggesting that stress is present. In addition, there is some prior evidence that trait assessments of coping and emotional tendencies are related to success in basic training (Vickers & Conway, 1983). The present study, therefore, considered personality as a predictor of individual differences in coping during initial exposure to basic training.

METHOD

Sample

The study consisted of two samples of Navy recruits who volunteered to participate in the study. Sample A, which began training in July, 1986, consisted of 551 recruits. The typical recruit was 19.3 (S.D.=2.7) years of age. The major ethnic groups were Whites (71%), Blacks (17%), and Hispanics (7%). Most of the recruits graduated from high school (95%) or had a Graduate Equivalency Diploma (1%), but a small number failed to complete high school (4%).

Sample B, which began training in February, 1988, consisted of 568 recruits. The typical recruit was 20.3 (S.D.=2.9) years of age. The major ethnic groups were Whites (69%), Blacks (17%), and Hispanics (8%). Again, most of the recruits graduated from high school (83%) or had a Graduate Equivalency Diploma (9%), and the remainder failed to complete high school (8%).

Coping Assessment.

A 71-item "Ways of Coping with Basic Training" questionnaire was developed by combining items from the initial (Coyne, Aldwin, & Lazarus, 1981) and revised (Lazarus & Folkman, 1984) "Ways of Coping" questionnaires. This questionnaire was administered to recruits just prior to beginning the formal training schedule. For the typical recruit, this data collection session took place 5 to 7 days after arriving at the Recruit Training Command. The recruits were asked to indicate how they had dealt with the demands of basic training since their arrival at the command. Sample A respondents indicated their coping behaviors using a dichotomous scale indicating simply whether or not they had employed each coping behavior. Sample B respondents indicated the extent to which they had used each behavior with responses on a 4-point Likert scale with response options from "Not Used" (scored 0) to "Used a Great Deal" (scored 3).

Coping composites for analyses were developed in a 3-stage procedure. First, previous factor analyses which utilized the original or revised "Ways of Coping" and reported the full scale content of factor analytically derived scales were reviewed (Coyne, et al., 1981; Vitaliano, Russo, Carr, Maiuro, & Becker, 1985; Folkman, Lazarus, Dunkel-Schetter, et al., 1986; Aldwin, Folkman, Schaefer, Coyne, & Lazarus, 1980; Aldwin & Revenson, 1987) to identify clusters of items which recurred in these analyses. Eight clusters of items were identified which consistently were elements of a single factor in these analyses. These clusters provided the bases for working definitions of coping styles. In the second stage of scale construction, the remaining coping items were assigned to the 8 coping categories by matching manifest item content to the working definitions as closely as possible. In the third stage, the internal consistency of the proposed coping composites was determined in data from two samples of Navy recruits who completed the questionnaire at the end of basic training. Items with item-total correlations less than .30 in either sample were deleted. The resulting composites were comparable generally to those employed by Folkman, Lazarus, Dunkel-Schetter, et al., (1986), but were based on a broader sampling of coping research and were sensitive to any situation- or population-specific factors affecting the manifestations and structure of coping. These scales were:

1. Positive Reappraisal: The tendency to look for benefits arising from the challenge of the situation. (6 items; e.g., "Concentrated on something good that could come out of the whole thing." Sample A, alpha = .54, mean = 1.80, s.d. = 0.24; Sample B, alpha = .67, mean = 1.81, s.d. = 0.60).

2. Problem Solving: Efforts to define the problem and develop and implement plans to deal with it. (8 items, e.g., "Made a plan of action and followed it." Sample A, alpha = .64, mean = 1.70, s.d. = 0.26; Sample B, alpha = .73, mean = 1.59, s.d. = 0.58).

3. Seeking Support: Going to other people for information and to discuss thoughts, feelings, and ideas. (6 items, e.g. "Talked to someone who could do something concrete about the problem." Sample A, alpha = .55, mean = 1.63, s.d. = 0.29; Sample B, alpha = .66, mean = 1.26, s.d. = 0.66).

4. Self-Blame: Having thoughts that the problem was a personal failure brought on by one's own actions. (5 items, e.g., "Realized I brought the problem on myself." Sample A, alpha = .55, mean = 1.56, s.d. = 0.33; Sample B, alpha = .66, mean = 1.38, s.d. = 0.66).

5. Escape: Wishful thinking about other times and places when things were better or about ways to change self to improve situation. (9 items, e.g., "Daydreamed or imagined a better time or place than the one I was in." Sample A, alpha = .61, mean = 1.60, s.d. = 0.24; Sample B, alpha = .67, mean = 1.54, s.d. = 0.52).

6. Caution: Adopting a "wait and see" attitude before acting. (4 items; e.g., "Felt that time would make a difference, the only thing to do was to wait." Sample A, alpha = .30, mean = 1.70, s.d. = 0.26; Sample B, alpha = .43, mean = 1.54, s.d. = 0.57).

7. Negotiation: Going to the person who caused the problem to work out a solution if possible. (4 items, "Tried to get the person responsible to change his or her mind." Sample A, alpha = .22, mean = 1.47, s.d. = 0.31; Sample B, alpha = .37, mean = 1.14, s.d. = 0.66).

8. Minimization: Attempting to control emotional expression and the impact of emotional reactions on behavior. (6 items, e.g., "Didn't let it get to me; refused to think too much about it." Sample A, alpha = .41, mean = 1.61, s.d. = 0.26; Sample B, alpha = .45, mean = 1.34, s.d. = 0.52).

The proposed scales for Caution and Negotiation were dropped from further analysis, because of the very low internal consistency estimates in both samples. Minimization was retained for exploratory purposes, although its internal consistency estimate was too low to suggest that definitive results could be obtained.

Personality Assessment.

The NEO Personality Inventory (Costa & McCrae, 1985) provided measures of the five major dimensions of personality which have been proposed as a comprehensive general description of the personality domain (Norman, 1963; Goldberg, 1981; Digman & Takemoto-Chock, 1981; Digman & Inouye, 1986). The manual for this inventory indicates that one dimension, Neuroticism, assesses adjustment vs. emotional instability. This dimension identifies individuals prone to psychological distress, unrealistic ideas, excessive cravings or urges, and maladaptive coping responses. A second dimension, Extraversion, assesses quantity and intensity of interpersonal interaction, activity level, need for stimulation, and capacity for joy. A third dimension, Openness, assesses proactive seeking and appreciation of experience for its own sake. This dimension looks at the toleration for and exploration of the unfamiliar. A fourth dimension, Agreeableness, assesses the quality of one's interpersonal orientation along a continuum from compassion to antagonism in thoughts, feelings and actions. The final dimension, Conscientiousness, assesses the individual's degree of organization, persistence and motivation in goal-directed behavior. Extreme scores contrast dependable, fastidious people with those who are lackadaisical and sloppy.

Analysis Procedures.

Pearson product moment correlations were computed to describe the bivariate relationships between the personality dimensions and coping scales. Multiple regression procedures with the coping scales as dependent variables and the personality dimensions as the predictor variables assessed the overall predictive power for the set of personality dimensions relative to each coping scale. All analyses were performed with the Statistical Package for the Social Sciences (SPSS, 1988).

Weighted average Pearson product moment correlations between personality scales and coping scales have been reported in this paper, because Hays' (1963, p. 532) χ^2 statistic indicated significant ($p < .05$)

intersample variation for only 8 of 176 correlation coefficients. Individual correlations were considered statistically significant if they had the same sign in both samples, did not vary significantly across samples as indicated by Hays' V , had pooled significance estimates for the two samples of $p < .05$ by both the method of adding probabilities and weighted z-scores (Rosenthal, 1978), and had a weighted average correlation greater than .10 (absolute), thereby satisfying Cohen's (1969) criterion for a small effect size. Correlations were averaged with and without Fisher's r-to-z transformation to determine whether this choice would substantially alter the findings. This comparison was made to evaluate issues raised in recent studies of the appropriate ways to combine correlations (Hunter, Schmidt, & Jackson, 1982; Strube, 1988). In the present data, the averages obtained from the two procedures differed by at most .0009, so the choice between averaging procedures had no effect on the conclusions reached.

A multivariate predictive equation was developed for each scale by a stepwise procedure. The personality variable with the largest average correlation to the coping scale was entered as the initial predictor. The partial correlations for the remaining personality measures then were examined to identify those which were greater than .10 (absolute) in both samples. Pooled significance estimates were computed for each personality dimension meeting this effect size criterion, and the predictor with the most extreme significance estimate was entered as the second predictor in the equation in both samples. The procedure then was repeated for the remaining personality measures, until no more predictors met the effect size criterion. Results are reported below as the weighted averages of the standardized regression coefficients (betas) and the multiple correlations. Standardized coefficients were averaged, because the difference in response options for the two samples meant that unstandardized coefficients were not comparable. Considering the multiple correlation as the correlation between the dependent variable and a composite predictor variable (Wherry, 1984), the use of averaged multiple correlations is comparable to the use of averaged bivariate correlations.

RESULTS

Bivariate Personality-Coping Correlations.

The significance criteria were met by 15 of 30 correlations (Table 1) and 11 associations exceeded the Bonferroni probability level required to fix experiment-wide error probability at 5 per cent or less ($p < .00167$; cf., Wherry, 1984). Table 1 presents the personality-coping correlations arranged by the approximate strength and consistency of the correlations. Thus, the first column of correlations is for Conscientiousness, because it was the personality variable with the largest average correlation to the six coping measures. Similarly, Problem Solving defines the first row of the table, because it had the largest average correlation to personality. Overall, therefore, Conscientiousness was the strongest personality predictor of coping, followed by Neuroticism, Extraversion, Agreeableness, and Openness. The ordering would be slightly different if the number of significant coping correlations were the basis for ranking personality variables as Neuroticism was significantly related to 4 coping scales, while Conscientiousness, Extraversion and Agreeableness significantly related to 3 coping scales and Openness to only 2 coping scales.

Table 1
Average Personality-Coping Correlations

Coping Scale	Personality Variable				
	C	N	E	A	O
Problem Solving	.441***	-.256***	.270***	.149***	.096
Positive Reappraisal	.387***	-.161***	.285***	.142**	.133**
Seeking Support	.232**	-.092	.238***	.157***	.082
Escape	.087	.367***	.017	-.046	.066
Self-Blame	.018	.258***	-.015	.080	.131**
Minimization	.017	-.025	-.043	-.042	.023

* $p < .05$ ** $p < .01$ *** $p < .00167$

NOTE: C = Conscientiousness, N = Neuroticism, E = Extraversion, A = Agreeableness, O = Openness. Table entries are average correlations with pooled probability levels (see Analysis Procedures for details).

Regression of Coping on Personality

The multivariate predictive accuracy of the personality variables relative to the coping variables is indicated by the multiple correlations in Table 2. The average beta weights are given in this table for all predictors which met the criterion for entry into the regression equation for the indicated coping style. As might be expected from the bivariate correlations, Neuroticism and Conscientiousness were the major contributors to the regression equations, accounting for 6 of 10 of the retained beta weights. However, Conscientiousness and Neuroticism were related to distinct coping scales, except in the case of Self-blame, where both were predictors. The positive weight for Conscientiousness as a predictor of Self-blame was the only regression weight that did not reflect a significant bivariate association.

Table 2

Standardized Regression Coefficients for Equations to Predict Coping Style from Personality Variables

Coping Scale	C	Personality Dimension				Multiple R
		N	E	A	O	
Problem Solving	.441	---	---	---	---	.441
Positive Reappraisal	.385	---	---	---	.122	.409
Seeking Support	.174	---	.177	---	---	.291
Escape	---	.367	---	---	---	.367
Self-Blame	.246	.366	---	.107	.112	.349
Minimization	---	---	---	---	---	.000

NOTE: C = Conscientiousness, N = Neuroticism, E = Extraversion, A = Agreeableness, O = Openness. Table entries are weighted averages for beta coefficients and multiple correlation coefficients (see Analysis Procedures for details).

DISCUSSION

The claim that personality traits influence coping in a standardized situation was supported by statistically significant associations for each coping style except minimization. Even this latter finding may have been attributable to the retention of a coping composite with very low reliability. In general, the associations were moderately strong given the

limited reliability of the coping measures.

Assuming the personality measures represented stable attributes of the individual and that the coping measures represented reactions to a specific situation, these results provide a reasonable basis for claiming that personality has a causal influence on coping. The present findings, however, do not necessarily mean that personality is a constraint on coping. A predisposition toward infrequent use of a particular coping style is not equivalent to the inability to use that style when that style is the only solution available. Whether the effects of personality attributes on coping extend from influencing the choice of coping among alternative possibilities to actually impairing adjustment by setting limits on the use of a given coping style remains to be determined. Clark and Hovanitz (1989) have begun to address this question by showing that personality predicts subjective estimates of maximum ability to use particular coping styles. If these subjective estimates are sound indicators of true ability, the present evidence and related findings reported by others could be interpreted as support for the position that personality actually constrains coping.

The extent to which personality influences coping varied from one coping style to another, as indicated by multiple correlations explaining between zero percent and 20 per cent of the variance in specific coping scales. To some extent, these differences can be attributed to differences in the precision of measurement of different coping styles, but measurement differences were far too small to account for 20-fold differences in variance explained, so the true magnitude of the influence of personality evidently varied across coping mechanisms. Whether this finding would replicate in other settings and, if so, whether the rank order of differences between coping mechanisms would be constant across settings remains to be determined. If a consistent ordering is identified in a series of studies, coping theories should account for the differences. Such differences also could have implications for attempts to modify coping styles in applied or clinical settings.

Distinct, integrated coping styles may be significant components of neuroticism and conscientiousness. The coping correlates of conscientiousness, i.e., problem solving, appraisal, seeking support, and caution, suggest behaviors directly oriented to problem identification, definition, and solving, a pattern consistent with the methodical, goal-oriented aspects

of conscientiousness. The relationship between Conscientiousness and Self-Blame uncovered in the regression analyses suggests that individuals displaying this personality-coping composite tend to blame themselves for problems they are unable to solve. The claim that these coping behaviors represent an integrated style can be justified on the basis of factor analyses which identify problem-solving activities as one major dimension of coping (Coyne, et al., 1981; Billings & Moos, 1982). This set of interrelated elements appears more sensitive to specific situational demands than other aspects of coping are (Costa & McCrae, in press), so conscientiousness may encompass behaviors fitting one classical definition of coping as reality-oriented, flexible, problem-solving behavior (French, Rodgers & Cobb, 1974).

The coping style associated with neuroticism includes wishful thinking and self-blame, a trend suggesting a general tendency to assign responsibility for problems to personal inadequacies and to adopt a passive, daydreaming approach rather than directly attempting to ameliorate these problems. Again, the inference that these coping mechanisms form an integrated coping style is supported by prior work which has identified attempts at emotional control, which includes indicators that are related to self-blame and escape, as one higher-order dimension of coping (Coyne, et al., 1981; Billings & Moos, 1982; Dunkel-Schetter, Folkman & Lazarus, 1987). The focus on passive thought rather than active planning and problem solving suggests a closer parallel between this "coping" style and the concept of defensiveness, at least in some formulations (e.g., French, Rodgers & Cobb, 1974; Haan, 1977).

The remaining major dimensions of the personality domain were not associated with unique, well-defined coping styles in the present study, but a better understanding of the microstructure of coping is needed before it would be appropriate to conclude that these dimensions do not include characteristic coping styles as significant components. Extraversion, Agreeableness, and Openness all contributed significantly to at least one of the regression equations to predict different coping styles, thereby indicating some independent association to coping controlling for Neuroticism and Conscientiousness. However, in all cases, the beta weights were modest and confined to one or two coping measures.

Although Neuroticism and Conscientiousness may be the only personality

domains with strong associations to coping style, two possibilities should be considered before this conclusion is accepted. First, the coping scales for Positive Reappraisal, Seeking Support, and Self-Blame all were related to more than one personality dimension. In these instances, it is possible that the coping scales involved are composites of potentially distinct elements, each of which has a distinct pattern of associations to personality. For example, social support has several conceptually distinct components (House, 1981; Kahn & Antonucci, 1981), and the support sought by an extravert may differ in conceptually important ways from that sought by a conscientious individual. This possibility is supported by a prior demonstration that different elements of social support have different patterns of association to coping scales (Dunkel-Schetter, et al., 1987).

The second possibility to consider is that reliance on a few general coping measures may be an inappropriate strategy for defining personality-coping associations. More extensive and detailed assessments of coping are possible and may provide useful insight into the overall pattern of associations. For example, McCrae (1984) was able to construct a much more extensive list of coping items than are used in the inventory employed here and developed 28 scales from that inventory rather than 8. These additional items and scales might produce wider evidence of personality-coping associations as indicated by the finding that humor is a reliable correlate of openness to experience (Costa & McCrae, 1986). Certainly, the present findings obtained with only six coping scales are not definitive.

When studies such as the present investigation are conducted in a single population and a specific situation, the question of the replicability of the findings must be considered. Overall, the findings from this study suggest that two major dimensions of personality are associated with two established major dimensions of coping. This general pattern can be expected to generalize, because qualitatively similar findings have been obtained in other studies. McCrae and Costa (1986) studied two samples of U.S. adults and reported reliable associations of .10 or greater between Neuroticism and scales comparable to wishful thinking (e.g., wishful thinking, escapist fantasy) and self-blame (e.g., self-blame and assessing blame). Extraversion was reliably related to scales comparable to problem-solving (rational action, self-adaptation) and positive reappraisal

(positive thinking, drawing strength from adversity), and caution (restraint). Rim (1986) studied a male and a female sample of Israelis and reported that neuroticism was related to higher scores on wishful thinking and self-blame and lower scores on problem-focused coping in both groups, but extraversion was not reliably related to coping. Clark and Hovanitz (1989) demonstrated reliable positive associations for 10 of 16 correlations between clinical scales from the Minnesota Multiphasic Personality Inventory (MMPI) and the self-blame and escape measures developed by Folkman, Lazarus, Gruen and DeLongis (1986). In contrast, problem-solving and positive reappraisal produced only one replicable association. Assuming that the MMPI clinical scales measure primarily neurotic tendencies, this pattern of differential correlations is consistent with the present findings. Carver, et al. (1989) found that scales equivalent to problem solving and positive reappraisal were positively related to optimism, hardiness, and self-esteem and negatively related to anxiety. A scale equivalent to escape in their study showed the opposite pattern of associations. These results complement the present findings, if it can be assumed that the goal-oriented elements of optimism and hardiness make them comparable to conscientiousness. Thus, a reasonably consistent body of results has been generated by available studies, and it is unlikely the present findings are unique to the present population and setting.

On the whole, there is reason to believe that personality influences coping and that the specific patterns of influence are consistent across different populations and stresses. At present, there is general agreement that neuroticism is associated with self-blame and wishful thinking, while extraversion is associated with problem-oriented coping. The present findings suggest that reported correlations between extraversion and problem-solving arise because extraversion and conscientiousness tend to be correlated, but this point requires replication. Additional work to identify the coping correlates, if any, of extraversion, openness, and agreeableness also has potential value. Given that reliable knowledge of personality-coping associations has the potential to improve our understanding of both coping and personality and their interplay, additional investigations along these lines should contribute usefully to models relating psychological attributes to well-being.

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REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION (U) UNCLASSIFIED			1b RESTRICTIVE MARKINGS None		
2a SECURITY CLASSIFICATION AUTHORITY N/A			3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.		
2b DECLASSIFICATION/DOWNGRADING SCHEDULE N/A					
4 PERFORMING ORGANIZATION REPORT NUMBER(S) NHRC Report No. 89- 3			5 MONITORING ORGANIZATION REPORT NUMBER(S)		
6a NAME OF PERFORMING ORGANIZATION Naval Health Research Center		6b OFFICE SYMBOL (If applicable) 10	7a NAME OF MONITORING ORGANIZATION Commander, Naval Medical Command		
6c ADDRESS (City, State, and ZIP Code) P.O. Box 85122 San Diego, CA 92138-9174			7b ADDRESS (City, State, and ZIP Code) Department of the Navy Washington, DC 20372		
8a NAME OF FUNDING/SPONSORING ORGANIZATION Naval Medical Research & Development Command		8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c ADDRESS (City, State, and ZIP Code) Naval Medical Command National Capital Region Bethesda, MD 20814-5044			10. SOURCE OF FUNDING NUMBERS		
	PROGRAM ELEMENT NO.	PROJECT NO. MR04101	TASK NO .00A	WORK UNIT ACCESSION NO 6004	
11 TITLE (Include Security Classification) Personality Correlates of Coping with Military Basic Training					
12 PERSONAL AUTHOR(S) Vickers, Ross R., Jr., Kolar, David W., and Hervig, Linda K.					
13a. TYPE OF REPORT Interim		13b TIME COVERED FROM _____ TO _____		14 DATE OF REPORT (Year, Month, Day) 1989 March 1	
15 PAGE COUNT					
16 SUPPLEMENTARY NOTATION					
17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Personality Navy men		
			Coping Stress		
			Theory		
19 ABSTRACT (Continue on reverse if necessary and identify by block number) Substantial associations between personality traits and coping style under stress were identified in recruits going through U.S. Navy basic training. The personality trait of conscientiousness was related to active problem solving efforts, while neuroticism was related to self-blame and wishful thinking. Unique coping styles could not be clearly identified for the personality dimensions of openness, agreeableness, and extraversion. The findings link stable psychological traits to situational coping reactions that may influence morale, performance, and health. These associations provide information that can be useful for models to explain how stable traits are translated into psychological processes that determine the effects of exposure to demanding situations.					
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT ☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT ☐ DTIC USERS			21 ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a NAME OF RESPONSIBLE INDIVIDUAL Vickers, Ross R., Jr.			22b TELEPHONE (Include Area Code) (619) 553-8454		22c OFFICE SYMBOL 10