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# Relations Between Personality and Coping: A Meta-Analysis

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Personality may directly facilitate or constrain coping, but relations of personality to coping have been inconsistent across studies, suggesting a need for greater attention to methods and samples. This meta-analysis tested moderators of relations between Big Five personality traits and coping using 2,653 effect sizes drawn from 165 samples and 33,094 participants. Personality was weakly related to broad coping (e.g., Engagement or Disengagement), but all 5 traits predicted specific strategies. Extraversion and Conscientiousness predicted more problem-solving and cognitive restructuring, Neuroticism less. Neuroticism predicted problematic strategies like wishful thinking, withdrawal, and emotion-focused coping but, like Extraversion, also predicted support seeking. Personality more strongly predicted coping in young samples, stressed samples, and samples reporting dispositional rather than situation-specific coping. Daily versus retrospective coping reports and self-selected versus researcher-selected stressors also moderated relations between personality and coping. Cross-cultural differences were present, and ethnically diverse samples showed more protective effects of personality. Richer understanding of the role of personality in the coping process requires assessment of personality facets and specific coping strategies, use of laboratory and daily report studies, and multivariate analyses.

*Keywords:* personality, coping, meta-analysis

Coping has been described as “personality in action under stress” (Bolger, 1990, p. 525), and theorists have suggested that “coping ought to be redefined as a personality process” (Vollrath, 2001, p. 341). These ideas have been supported by evidence that personality and coping have a shared genetic basis (Kato & Pedersen, 2005) and by correlations between personality and coping exceeding .60 (e.g., Fickova, 2001; Houtman, 1990; McWilliams, Cox, & Enns, 2003). However, the magnitude, and even direction, of correlations between personality and coping has varied across studies, with many studies failing to demonstrate expected relations despite adequate statistical power and use of reliable and valid measures (e.g., Horner, 1996; Lu & Chen, 1996). This inconsistency suggests that relations between personality and coping may be more modest than has been assumed or that moderators such as stressor severity, the focus or reporting timeframe of the coping measure, or demographic factors influence relations.

## Defining Personality and Coping

Broadly, personality and temperament are defined as characteristic patterns of thoughts, feelings, and behaviors over time and across situations. Although temperament often refers to traits reflecting predominantly biological predispositions, and personality

to traits influenced by environmental factors, models of temperament and personality show a strong degree of overlap. The five-factor model is the most common, with substantial agreement that the “Big Five” traits of Neuroticism (N), Extraversion (E), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O) are rooted in biological structures and processes (John & Srivastava, 1999; McCrae et al., 2000; Rothbart & Bates, 1998). These traits are also relatively stable across age groups and cultures (Hendriks et al., 2003; McCrae, Costa, del Pilar, Rolland, & Parker, 1998), making the Big Five model a good starting point for organizing diverse measures of temperament and personality.

Personality and coping were essentially equated in psychodynamic theory, with defense mechanisms conceptualized as stable traits that influenced perceptions of events and dictated consistently adaptive or maladaptive responses (see Suls, David, & Harvey, 1996, for an excellent history). Although most researchers now distinguish between personality and coping, some conceptualizations of coping remain quite broad. For example, trait coping has been defined as “characteristic ways of responding to changes of any type in the environment” (Beutler, Moos, & Lane, 2003, p. 1158), and many theorists consider automatic, unconscious, and involuntary responses to be aspects of coping (Eisenberg, Fabes, & Guthrie, 1997; Skinner, 1995). In contrast, the transactional model of stress and coping de-emphasizes the role of stable traits, defining coping as a conscious, intentional, goal-directed response, tailored to the specific demands of a stressor (Lazarus & Folkman, 1984). To best preserve the distinction between personality and coping, in this study we limit coping to conscious, volitional attempts to regulate the environment or one’s reaction to the environment under stressful conditions (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001).

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## *Coping Dimensions*

Numerous models have been used to describe the structure of coping, with distinctions between problem- and emotion-focused coping, engagement (approach, active) and disengagement (avoidant) coping, and primary (assimilative) and secondary (accommodative) control coping the most widely used (see detailed reviews by Compas et al., 2001, and Skinner, Edge, Altman, & Sherwood, 2003). Modern coping research began with the distinction between *problem-focused coping*, intended to influence the source of stress, and *emotion-focused coping*, intended to minimize negative emotions through strategies such as emotional expression, support seeking, and avoidance (Lazarus & Folkman, 1984). The engagement–disengagement distinction focuses on orientation toward or away from stress, with *engagement coping* involving active attempts to manage a situation or associated emotions, and *disengagement coping* involving distancing oneself from the stressor or related feelings. The distinction between primary and secondary control coping emphasizes coping goals, with *primary control coping* geared toward changing the stressor or related emotions through strategies such as problem solving or emotion regulation and *secondary control coping* used to facilitate adaptation to stress through strategies such as acceptance or cognitive restructuring (Rothbaum, Weisz, & Snyder, 1982). Although coping strategies are not universally beneficial or detrimental, problem-focused coping, engagement coping, and primary and secondary control coping typically predict better physical and mental health, and disengagement and emotion-focused coping typically predict poorer outcomes (Compas et al., 2001).

Although all of these distinctions remain widely used, confirmatory factor analyses have shown that no one distinction alone adequately reflects the structure of coping (e.g., Ayers, Sandler, West, & Roosa, 1996; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Further, these distinctions have been critiqued both for failing to include the full range of coping strategies (e.g., the primary/secondary control distinction ignores disengagement) and for combining disparate strategies into overly broad dimensions (Compas et al., 2001; Coyne & Gottlieb, 1996; Skinner et al., 2003). For example, measures of emotion-focused coping combine strategies as diverse as relaxation, seeking support, wishful thinking, and avoidance, and they include negative emotional expression items (e.g., crying, worrying, breaking things) that are confounded with distress and psychopathology (Coyne & Gottlieb, 1996; Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Although emotion-focused measures assessing unregulated emotional reactivity predict poor outcomes, measures assessing strategies for appropriately expressing and modulating emotions predict good outcomes, highlighting the importance of distinguishing between types of emotion-focused coping (Compas et al., 2001; Stanton et al., 1994). Measures of disengagement coping have been critiqued for including distraction with disengagement strategies. Although distraction involves temporarily moving away from distressing emotions, it also reflects the secondary control coping goal of adapting to the environment through intentional engagement with positive activities. Confirmatory factor analyses consistently find superior fit for models placing distraction and disengagement strategies on separate factors (e.g., Ayers et al., 1996; Connor-Smith & Calvete, 2004; Connor-Smith et al., 2000; Gaudreau, El Ali, & Marivain, 2005; Wadsworth,

Rieckmann, Benson, & Compas, 2004; Walker, Smith, Garber, & Van Slyke, 1997). The outcomes of distraction and disengagement are also distinct, with distraction linked to low levels of intrusive thoughts and psychological distress and disengagement linked to high levels (Compas et al., 2001; Wegner, 1994).

A recent review of the coping literature revealed more than 100 coping categorization schemes, along with multiple scoring systems for common coping measures (Skinner et al., 2003). Although this lack of consistency makes aggregation across studies a daunting task, recent confirmatory factor analyses (e.g., Ayers et al., 1996; Connor-Smith et al., 2000; Tobin, Holroyd, Reynolds, & Wigal, 1989; Walker et al., 1997) have generated greater consensus about a hierarchical structure of coping. At the top of the hierarchy is the distinction between engagement and disengagement coping. At the next level, engagement coping can be further distinguished by coping goals into primary and secondary control engagement strategies. This hierarchical coping model produces three core families of coping, each comprised of more specific coping strategies (see Table 1). Disengagement coping includes strategies such as avoidance, denial, wishful thinking, and withdrawal. Primary control engagement coping includes strategies targeted toward changing the stressor or related emotions, through problem-focused coping or efforts to regulate and appropriately express emotions. Secondary control engagement coping includes strategies emphasizing adaptation to stress, such as acceptance, cognitive restructuring, positive thinking, or distraction (see reviews by Compas et al., 2001; Skinner et al., 2003). Although some models make additional distinctions within these three categories (e.g., a separate social support factor), these distinctions can be reflected in analysis of specific coping subscales.

## *Mechanisms Linking Personality and Coping*

Personality may affect coping strategy selection directly, by constraining or facilitating use of specific strategies, or indirectly, by influencing the nature and severity of stressors experienced or the effectiveness of coping strategies (see Bolger & Zuckerman, 1995, for a detailed presentation of models linking personality and coping). Direct effects of personality on coping may begin in early childhood, with biologically based appetitive, defensive, and attentional systems providing the framework in which coping develops (Derryberry, Reed, & Pilkenton-Taylor, 2003). By facilitating approach to rewards, withdrawal from threats, and engagement or disengagement of attention, these biological tendencies may affect coping selection throughout the lifespan. For example, the sociability and approach underlying E may encourage support seeking, and the threat sensitivity underlying N may trigger disengagement.

Personality may also indirectly affect coping. Because coping is motivated by stress-exposure, stress-reactivity, and situational demands, the influence of personality on the frequency, intensity, and nature of stressors experienced may partially explain relations between personality and coping. For example, N is associated with high rates of stress exposure and intense emotional and physiological reactivity to stress, A with infrequent interpersonal conflict, C with limited stress-exposure due to preventive efforts, and E with low stress-reactivity and positive appraisals of available coping resources (Guntherth, Cohen, & Armeli, 1999; Penley & Tomaka, 2002; Vollrath, 2001; Suls & Martin, 2005). Individuals who experience numerous stressors or are highly stress reactive

Table 1  
*Definitions of Specific Coping Strategies and Organization Into Higher Level Categories*

Coping code	Definition
Negative Emotion Focused	Emotion regulation and expression strategies that suggest loss of control (e.g., hitting, throwing objects), distress (e.g., crying, yelling, self-blame), or hostility toward others.
Mixed Emotion Focused	Responses to emotional distress involving a mix of controlled and uncontrolled emotion regulation and expression strategies.
Engagement Coping	Broad category of approach-oriented responses directed toward the stressor or one's reactions to the stressor.
Primary Control	Active attempts to control or change a bad situation or one's emotional reaction to the situation.
Problem solving	Active attempts to resolve a stressor through planning, generation of possible solutions, logical analysis and evaluation of options, implementing solutions, and staying organized and on task.
Instrumental support	Problem-focused social support, including seeking help, resources, or advice about possible solutions to problems.
Emotional support	Emotion-focused social support, including seeking comfort, empathy, and closeness with others.
Mixed social support	A combination of instrumental and emotional support.
Emotional regulation	Active attempts to decrease negative emotions through controlled use of strategies such as relaxation or exercise, or modulating expressions of emotion to ensure that feelings are expressed at an appropriate time in a constructive manner
Secondary Control	Attempts to adapt to a stressor to create a better fit between the self and the environment.
Distraction	Taking a temporary break from a stressful situation by engaging in an enjoyable activity. Distraction does NOT involve attempts to avoid or deny problems.
Cognitive restructuring	Finding a more positive or realistic way to think about a bad situation, looking on the bright side, identifying benefits arising from the situation (e.g., personal growth), or finding a humorous side to the stressor.
Acceptance	Coming to terms with aspects of the stressor that can't be changed, learning to live with the stressor or one's limitations, developing a sense of understanding.
Religious Coping	Having faith in God, praying about the stressor, participating in religious services or activities.
Broad Disengagement	Broad category of responses oriented away from the stressor or one's reactions to the stressor. Historically, broad disengagement scales have included distraction, substance use, or symptoms of distress.
Narrow Disengagement	Disengagement responses excluding distraction, substance use, and symptoms of distress.
Avoidance	Attempts to avoid the problem, reminders of the problem, thoughts of the problem, or emotions related to the problem.
Denial	Active attempts to deny or forget about a problem, to hide your emotional response from yourself or others.
Wishful thinking	Hoping to be magically rescued from the situation or for the situation to disappear, fantasizing about unlikely outcomes, wishing that you or the situation were radically different.
Withdrawal	Intentionally isolating oneself, spending time alone, choosing not to share problems or emotions with others.
Substance Use	Use of alcohol, nicotine, or illegal drugs for the specific purpose of coping with stress.

may disengage to tame their own unpleasant arousal, whereas individuals who experience few stressors, are low in stress reactivity, and generate positive appraisals may be better positioned to use engagement coping.

Finally, personality traits may influence the effectiveness of coping strategies, with strategies that are beneficial for some individuals being less effective, or even harmful, for those with different personality traits (Bolger & Zuckerman, 1995; De Longis & Holtzman, 2005). In daily report studies, support seeking and self-controlling coping have predicted increased negative affect for high N, but decreased negative affect for low N, individuals, and avoidance has predicted increased negative affect for low N, but not high N, individuals (Bolger & Zuckerman, 1995; Gunther et al., 1999). Although avoidance is typically associated with negative, and engagement with positive, long-term results, the short-term costs and benefits of each strategy may play a powerful role in shaping future coping strategy selection. For example, the short-term, personality-related benefits of disengagement for high N individuals may amplify the direct effect of N on the tendency to disengage, explaining why high N individuals continue to use strategies that produce poor long-term results.

#### *Expected Relations Between Personality and Coping*

Table 2 indicates expected relations between personality and coping strategies. Predictions are based primarily on the ways in

which traits are likely to directly facilitate or constrain coping, as less is known about indirect effects through stress exposure and differential effectiveness. *Extraversion* (Positive Affectivity, Surgency) involves positive emotionality, sociability, assertiveness, high activity levels, and sensitivity to reward (McCrae & John, 1992; Rothbart & Bates, 1998). Having the energy and optimism required to initiate and persist in coping efforts, along with an outgoing nature, should facilitate primary control engagement strategies such as problem solving and seeking support and secondary control engagement strategies such as cognitive restructuring and distraction (Lengua, Sandler, West, Wolchik, & Curran, 1999; Vollrath, 2001). However, there is less reason to link E to engagement strategies such as emotion regulation, acceptance, or religious coping. Greater use of engagement coping does not imply decreased use of disengagement coping. Because the facets of E neither facilitate nor preclude disengagement, no link is expected to disengagement strategies. However, sensitivity to reward may predict substance use as a coping strategy. *Neuroticism* (Negative Affectivity, Emotional Stability) involves negative emotionality, self-consciousness, physiological reactivity to stress, and behavioral inhibition (McCrae & John, 1992; Miles & Hempel, 2003; Rothbart & Bates, 1998). Because N involves intense emotional and physical responses to stress, it should be linked to attempts to minimize unpleasant arousal through disengagement strategies such as avoidance and withdrawal, through substance use, and

Table 2  
*Expected Relations Between Personality Traits and Coping Strategies*

Coping code	Extraversion	Neuroticism	Agreeableness	Openness	Conscientiousness
Negative Emotion Focused	0	+	–	0	–
Mixed Emotion Focused	0	+	–	0	–
Engagement Coping	+	?	0	+	+
Primary Control	+	?	0	0	+
Problem solving	+	–	0	+	+
Instrumental support	+	?	+	0	0
Emotional support	+	?	+	0	0
Mixed social support	+	?	+	0	0
Emotional regulation	0	–	0	0	+
Secondary Control	+	–	0	+	+
Distraction	+	–	0	+	+
Cognitive restructuring	+	–	0	+	+
Acceptance	0	–	+	+	+
Religious Coping	0	?	+	–	0
Broad Disengagement	0	+	0	0	–
Narrow Disengagement	0	+	0	0	–
Avoidance	0	+	0	0	–
Denial	0	+	0	0	–
Wishful thinking	0	+	0	+	–
Withdrawal	0	+	–	0	–
Substance Use	+	+	?	0	–

*Note.* + = a positive correlation is expected; – = a negative correlation is expected; 0 = no relationship is expected; ? = it is not possible to make a clear prediction.

through negative emotion-focused coping strategies, such as venting. Emotional and physiological arousal are likely to interfere with primary and secondary control engagement coping strategies, which require planning and regulation of thoughts, potentially leading to a negative relationship between N and engagement strategies. However, coping is triggered by stress, and negative affect has been linked to greater use of the full spectrum of coping strategies (Zautra, Sheets, & Sandler, 1996), making it possible that N will predict engagement coping attempts. Because support seeking and religious coping require less controlled cognition than do other engagement strategies (e.g., problem solving or cognitive restructuring), these may be the engagement strategies favored by individuals high in N.

*Agreeableness* involves trust, altruism, compliance, and tender-mindedness (McCrae & John, 1992). Because A plays a limited role in the stress process, it should be unrelated to most engagement and disengagement strategies. However, as A is associated with high levels of perceived and received social support (Bowling, Beehr, & Swader, 2005; Tong et al., 2004), it should predict high levels of support seeking and low levels of withdrawal. A has also been linked to stoicism and compliance (Costa, Somerfield, & McCrae, 1996), making it likely to predict acceptance strategies. *Openness to Experience* (Intellect, Culture) involves the tendency to be creative, curious, flexible, imaginative, and involved in a range of intellectual interests (McCrae & John, 1992). This may lead to greater use of problem solving, cognitive restructuring, acceptance, and distraction, which require the ability to consider new perspectives. Although there is no reason to expect relations between O and most disengagement strategies, it may be related to wishful thinking, which involves imagination and fantasy. The high levels of self-regulation, persistence, impulse control, achievement orientation, and self-discipline that define *conscientiousness* (McCrae & John, 1992) may be rooted in attentional

systems that influence the ability to focus on boring or unpleasant tasks or to disengage from high intensity stimuli (Derryberry et al., 2003). C should predict primary control engagement strategies like problem solving and emotion regulation, which require planning and persistence in the face of difficulties, and secondary control engagement strategies such as distraction and cognitive restructuring, which require shifting attention from negative thoughts toward positive activities or thoughts. There is no reason to expect C to predict support seeking or religious coping. Because conscientious individuals should be able to resist impulses to give up or vent emotions inappropriately, C should predict lower levels of disengagement, substance use, and negative emotion-focused coping (Lengua et al., 1999; Vollrath, 2001).

#### *Potential Moderators of Relations Between Personality and Coping*

*Coping focus and coping report timeframe.* Dispositional coping reflects characteristic, or trait-like, responses to stress; whereas situation-specific coping reflects responses to a discrete stressor (see Moos & Holahan, 2003). Because responses to specific stressors are strongly influenced by situational factors, such as the nature and severity of the problem, personality should best predict reports of dispositional coping, which involves typical responses to a broad array of stressors. Personality should also be strongly linked to dispositional coping because personality influences the type of events experienced, which in turn influence typical coping (Bouchard, Guillemette, & Landry-Leger, 2004; Penley & Tomaka, 2002). For example, N may predict dispositional disengagement because N is linked to experiencing more stressors and to greater distress in response to problems (e.g., Bolger & Zuckerman, 1995). C may be negatively related to dispositional disengagement because C involves a tendency to plan ahead, reducing

the number of stressors experienced and providing opportunities to implement engagement strategies as anticipated difficulties arise. *Coping focus* analyses compare personality to coping correlations for dispositional versus situation-specific coping.

Because reporting biases may also influence the strength of relations between personality and coping, *coping report timeframe* analyses compare retrospective reports of situation-specific coping to more immediate reports. Self-reports of coping are influenced by memory errors, difficulty aggregating responses over time or across situations, and degree of problem resolution at the time of the report (e.g., R. E. Smith, Leffingwell, & Ptacek, 1999; Stone, Kennedy-Moore, & Neale, 1995; Stone et al., 1998), and may also be influenced by personality. For example, N is linked to negative biases in encoding and recall (Eysenck & Mogg, 1992; Ruiz-Caballero & Bermudez, 1995), perhaps leading to underreporting of engagement or overreporting of disengagement. Reporting biases should be more evident in retrospective reports of responses to specific stressors than in immediate or daily coping reports, making it likely that correlations between personality and coping will be stronger with retrospective coping reports. Reporting timeframe may also influence the pattern of relations between personality and coping, rather than just the magnitude, as daily report studies have revealed unexpected relationships, such as N predicting engagement (Bolger & Zuckerman, 1995) and E predicting disengagement (Newth & DeLongis, 2004).

*Stressor selection.* Because personality may influence the type of situation a person finds most distressing or recalls most readily, correlations between personality and coping should be stronger in studies assessing responses to a specific self-selected stressor (e.g., worst event in the last month) than in those assessing responses to a specific researcher-selected stressor, whether that stressor is naturalistic (e.g., final exams), or laboratory-based (e.g., giving a speech to a research assistant).

*Stress severity.* The influence of personality on emotions and behavior is particularly clear in high stress situations (Strelau, 2001), which allow more coping variability. Because stressors that are limited in duration or scope provide less room for individual differences to operate, the link between personality and coping should be clearer under conditions of intense or enduring stress (Gomez, Bounds, Holmberg, Fullarton, & Gomez, 1999; Moos & Holahan, 2003; Murberg, Bru, & Stephens, 2002).

*Age and sex.* Because temperament forms the basis for early coping, personality may be more strongly related to coping in younger individuals. Adults, who have the verbal and cognitive abilities to implement sophisticated coping strategies plus the experience to match strategies to problems, should exhibit more coping flexibility than children, who may be more constrained by personality. Sex may moderate relations between personality and coping due to sex differences in the types of stressors experienced, coping, and personality. For example, women seek more social support (Tamres, Janicki, & Helgeson, 2002), and score more highly on warmth and gregariousness facets of E (Costa, Terracciano, & McCrae, 2001), suggesting that E may better predict seeking support in women than in men.

*Cultural differences.* Although the structure of personality is similar across cultures, specific items defining personality factors differ slightly across cultures and translations of measures (John & Srivastava, 1999). Similarly, although the structure of coping is relatively consistent across cultures and ethnic groups, stressor

exposure and appraisal, coping resources, and the acceptability of coping strategies and frequency of use may differ across cultures (Connor-Smith & Calvete, 2004; Falkum, Olff, & Aasland, 1997; Hudek-Knežević, Kardum, & Vukmirović, 1999; Sica, Novara, Dorz, & Sanavio, 1997; Wadsworth et al., 2004). Cultural differences in personality and coping measures, stressors experienced, and attitudes toward personality traits and coping strategies may all influence the strength of relations between personality and coping.

## Method

### *Literature Search*

Relevant studies were identified by searching PsycINFO, Med-Line, and ERIC databases for records containing *coping* plus one of the following: *personality, temperament, extraversion/extravert, neuroticism/neurotic, conscientiousness, openness, agreeableness, positive affectivity/emotionality, negative affectivity/emotionality, PANAS, behavioral inhibition system (or BIS), behavioral activation system (or BAS), or trait anxiety*. The *Journal of Personality, Personality and Individual Differences*, and *Journal of Personality and Social Psychology* were searched manually for volumes published between 1980 and 2004. Finally, reference sections for included articles were examined. The database searches generated over 13,000 abstracts. The vast majority were excluded either because the source did not present original data or because the abstract provided no indication that the article presented data about relations between personality and coping.<sup>1</sup> A total of 124 published articles including 165 independent samples and 33,094 participants met inclusion criteria, providing 2,653 effect sizes.

### *Inclusion Criteria*

Only English language studies published between 1980 and 2004 were included. Earlier studies could not meaningfully be combined with those based on the transactional model of stress and coping because coping was not clearly distinguished from personality and defense mechanisms. Included studies assessed personality with a nonprojective measure classifiable within the Big Five model, assessed coping with a questionnaire classifiable within the structure presented in Table 1, and provided the information required to compute effect sizes. Samples with a mean participant age less than 9 years old were excluded, as most studies of young children assessed blends of coping and automatic self-regulation, rather than volitional coping alone. Observational and interview-based coping measures were excluded, as only two were available.

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<sup>1</sup>Many abstracts indicated that both personality and coping were measured, but did not explicitly mention that relations between personality and coping were explored. Fifteen of these abstracts were randomly selected, and none of the articles provided the data required to calculate an effect size. Although some of the articles excluded because the abstract did not specify that the required data was available may have actually provided the necessary data, we decided that the low yield of data to search time, and the low likelihood that effect sizes in these articles differed in a systematic way from other articles, made it reasonable to exclude these studies.

## Coding of Studies

Basic demographic information, including the mean age of participants, percentage of the sample that was male, country of origin, and percentage that was European-American (U.S. samples only), was coded. Stress level was coded as average (community sample) or high (e.g., sample facing divorce or serious illness). *Coping focus* indicates whether the study assessed dispositional coping, responses to a specific stressor, or responses to a hypothetical situation. For studies assessing responses to specific stressors, *stressor selector* indicates whether that stressor was selected by the participant or by the researcher, and *coping report time-frame* indicates whether the coping report was retrospective, ongoing, or daily. Because these codes are relatively straightforward, only 18% of studies were coded by two raters, with a mean of 99.3% agreement across codes. (An Excel file with codes for all articles included in the meta-analysis is available on the *Journal of Personality and Social Psychology* website.)

*Personality codes.* Personality traits were coded for fit within the Big Five model of personality. Coders were given brief definitions of each personality dimension, along with a set of descriptive adjectives reflecting high and low scores and a list of subscales from common measures of the Big Five. Because not all personality scales fit within the five-factor model of personality, coders were instructed to take a conservative approach, excluding scales that blended elements of two or more Big Five categories.<sup>2</sup> Codes were assigned on the basis of descriptions of personality scales within the article, review of scale items, and when necessary, consultation of additional sources (e.g., factor analytic studies, studies correlating the scale with well-established Big Five measures). All personality scales were coded by two raters, with 96.7% agreement. Disagreements were resolved by consensus.

In addition to scales specifically designed to assess E, the E code included measures of positive affectivity/emotionality, behavioral activation, sensitivity to reward, surgency, sociability, and high activity level/tempo. N included measures of emotional stability (reverse scored), behavioral inhibition, negative affectivity/emotionality, sensitivity to threat, and trait anxiety. C included measures of task orientation, attentional focus, persistence, and impulsivity (reverse scored) and A included scales assessing cooperativeness, sensitivity, and tender-mindedness. Of the Big Five factors, O, has been the least consistent across measures (John & Srivastava, 1999). Scales from Big Five measures of openness, culture, and intellect, along with scales assessing trait curiosity, absorption, and conservatism-conventionality (reverse scored) were included. A postcoding review of previous meta-analyses of personality (e.g., De Neve & Cooper, 1996; Zhao & Seibert, 2006) suggests that these coding decisions are consistent with those of other research groups.

*Coping codes.* Coping codes (see Table 1) were designed to reflect the hierarchical model of coping presented in the introduction, with coding taking place at three levels of detail: (a) Engagement versus Broad Disengagement, (b) Primary Control Engagement, Secondary Control Engagement, and Narrow Disengagement, and (c) specific coping strategies.

At the most specific level, the coping strategies selected for inclusion were those identified as core strategies in a review by Skinner et al. (2003). These strategies included Problem Solving, Social Support, Emotion Regulation, Distraction, Cognitive Re-

structuring, Acceptance, Religious Coping, Avoidance, Withdrawal, and Wishful Thinking (see Table 1). Because the goals of social support coping can range from problem solving to emotional expression, separate Instrumental, Emotional, and Mixed Social Support categories were used. In addition, Denial, Substance Use, and Emotion Focused Coping were included, as they represent distinct, commonly assessed, strategies. Coding of emotion-focused scales distinguished between scales emphasizing behaviors such as yelling, crying, self-blame, or aggression (Negative Emotion Focus), scales emphasizing strategies such as relaxation or waiting for an appropriate time to express emotions (Emotion Regulation), and those combining aspects of negative-emotion focus and self-regulation (Mixed Emotion Focus).

At the second level, Primary Control Coping comprises scales assessing active attempts to control the stressor and related emotions through strategies such as problem-solving, seeking support, or regulating emotions. Secondary Control Coping comprises scales assessing attempts to adapt to a problematic situation through strategies such as distraction, cognitive restructuring, or acceptance. Narrow Disengagement Coping includes attempts to distance oneself from the stressor through strategies such as avoidance, denial, wishful thinking, or withdrawal. At this level, tension arose between current models of the structure of coping and the measures used over the last quarter century, as many disengagement scales contain items emphasizing distraction, emotional distress, or substance use (which can involve elements of distraction, social engagement, or addiction). These mixed scales were excluded from the Narrow Disengagement code in order to create the purest possible measure of disengagement.

At the broadest level, Engagement Coping comprises all scales assessing an active approach toward the stressor or related emotions. This category includes all Primary and Secondary Control strategies, along with Religious Coping. Broad Disengagement Coping includes all scales within the Narrow Disengagement category, any broad disengagement scales that were excluded from the Narrow Disengagement category, and measures of coping through substance use.

Because many studies presented results only for broad coping scales, it was not possible to code all effect sizes at each level of detail. Coping codes were based on the description of the scale provided in the article and, when possible, on review of items comprising each scale. Item review was important, as scale names did not necessarily correspond to scale items. For example, a scale named "Worry" included items assessing problem solving, prayer for guidance and strength, and information seeking (Manyande & Salmon, 1992). One of the two avoidance subscales on the Coping Inventory for Stressful Situations (Cosway, Endler, Sadler, & Deary, 2000) assesses distraction and the other support seeking. Some subscales, such as the Confrontive Coping and Distancing subscales from the Revised Ways of Coping Questionnaire (Folk-

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<sup>2</sup>Results for Type A personality, psychoticism, harm avoidance, sensation seeking, and reward dependence are available from Jennifer K. Connor-Smith. Other stable individual differences, such as hardiness, optimism, sociotropy, autonomy, sense of coherence, locus of control, and self-efficacy, were not included because they do not fit neatly within any of the major categorizations of personality traits and often involve the combination of many of the five-factor traits.

man, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986), reflect a combination of several coping strategies and could be coded only at a broad level. Coping was double-coded for all samples, with rater agreement of 90.1% for specific strategy codes and above 98% for the Primary/Secondary/Narrow Disengagement and the Engagement and Disengagement codes.

### *Meta-Analytic Procedures*

Because most studies provided correlations between continuous measures of personality and coping, correlation was selected as the effect size measure. For data presented in some other form, such as *t* tests comparing individuals high or low on a personality trait, the effect-size calculator provided by Wilson (2005a) was used to calculate correlation. If results were described only as nonsignificant, we attempted to obtain the data directly from authors. For the six remaining samples for which some effects were unavailable, we omitted the missing effects rather than using the alternative strategy of imputing a zero. Investigation of nonsignificant effects from studies with similar sample sizes indicated an average magnitude of .10 for nonsignificant effects, which suggests that imputing a zero would underestimate the strength of relations between personality and coping. When a study provided more than one effect for the relationship between a specific personality trait and specific coping dimension or strategy, we averaged effects to produce just one effect size per sample for each comparison. Similarly, because some samples were used in more than one publication, effects were averaged across publications that were based on identical or near-identical samples. To prevent a few very large samples from unduly influencing results, large sample sizes were recoded to 2.5 standard deviations above the mean.

Meta-analyses can be conducted using a fixed-effects (FE) model, which assumes that differences between study effect sizes and the population mean are a result of subject-level sampling error. Heterogeneity tests (*Q* statistic) indicate whether distributions of effect sizes show greater variance than expected due to sampling error. If heterogeneity is significant and variability is assumed to arise from identifiable sources, making finer distinctions among groups (e.g., group by specific, rather than broad, coping strategies) and testing moderators may account for variance above sampling error. For this study, an FE model may be appropriate, as we believe sources of variance are identifiable. However, because some levels of hypothesized moderators were rare, it was not possible to test all moderators at the coping subscale level, which made it impossible to determine whether moderators account for all variance beyond sampling error.

An alternative to the FE model is a random-effects (RE) model, which assumes the influence of both sampling error and randomly distributed sources of variance (Lipsey & Wilson, 2000). The RE model has the advantage of permitting inferences to studies with participants and measures different from those included in the meta-analysis, whereas the FE model limits inferences to studies with parameters identical to those of the studies included (Hedges & Vevea, 1998). However, RE models have limited power to detect moderators, particularly when the sample size for subgroups is small (Hedges & Vevea, 1998; Oswald & Johnson, 1998). Given that power analyses (Hedges & Pigott, 2004) have indicated poor

to moderate power to detect some moderators even with an FE model, we opted to use an FE model for the primary presentation of results but to also indicate results of RE analyses. FE results have a greater risk of Type I error, RE results a greater risk of Type II error.

Data were analyzed following procedures described in Lipsey and Wilson (2000) using Fisher's *Z*-transformed correlation coefficients weighted by the inverse of the variance. Mean effect sizes and confidence intervals were computed using SPSS macros (Wilson, 2005b) and converted back to correlation to facilitate interpretation of results. Analyses analogous to analyses of variance were used to test moderation by dichotomous variables, and analyses analogous to regressions were used to test moderation by continuous variables (Wilson, 2005b).

## Results

Table 3 presents personality and coping codes for individual studies. Table 4 provides descriptive statistics for the sample of studies included. The majority of studies were based on self-reports of dispositional coping in European and American samples. Although stronger effects were expected at the level of specific coping strategies, effects were computed at all three levels of the coping hierarchy to provide information about the level of coping specificity required to meaningfully assess relations between personality and coping. Also, because many studies used only broad coping measures, and because there was limited variability across studies in ethnicity, coping timeframe, and stressor selection, many moderators could be tested only at the level of broad engagement and disengagement.

### *Engagement and Disengagement Coping*

Table 5 reports mean correlations for relations of personality to Engagement and Broad Disengagement Coping. As a rule of thumb, a correlation of .10 is a small effect, .30 a medium effect, and .50 a large effect (Cohen, 1988). Mean effects were in expected directions, with Engagement Coping positively associated with E ( $r = .15$ ), O ( $r = .10$ ), and C ( $r = .11$ ). Disengagement Coping was positively associated with N ( $r = .27$ ), and negatively with A ( $r = -.13$ ) and C ( $r = -.15$ ). All tests of heterogeneity were significant, indicating that variation in effect sizes was not due simply to sampling error.

### *Primary Control, Secondary Control, and Narrow Disengagement*

Table 6 reports mean correlations between personality and primary Control, Secondary Control, and Narrow Disengagement Coping. Once again, mean effects were small in magnitude. Primary Control Coping was positively associated with E ( $r = .19$ ), O ( $r = .11$ ), and C ( $r = .18$ ). Similarly, Secondary Control was positively associated with E ( $r = .15$ ) and O ( $r = .11$ ). Narrow Disengagement Coping was positively associated with N ( $r = .28$ ) and negatively associated with C ( $r = -.10$ ).

## Specific Coping Strategies

Table 7 reports mean effects for specific coping strategies. To facilitate comparison to previous analyses, we grouped strategies by higher order Primary Control, Secondary Control, or Narrow Disengagement categories, with the exception of Negative Emotion Focused, Mixed Emotion Focused, Religious, and Substance Use Coping, which reflect mixtures of coping goals across the three categories.

*Specific primary control strategies.* Results indicate the importance of distinguishing between specific strategies. Although E showed the expected correlations with Problem Solving ( $r = .20$ ) and social support strategies (correlations ranged from  $.22$  to  $.25$ ), there was no link to Emotion Regulation ( $r = .03$ ). N was essentially unrelated to Emotion Regulation, Mixed Social Support, and Instrumental Support, but negatively related to Problem Solving ( $r = -.13$ ) and positively related to Emotional Support ( $r = .11$ ). A and O were essentially unrelated to Primary Control Coping, but correlations exceeded  $.10$  between A and Mixed and Emotional Social Support, and between O and Problem Solving ( $r = .14$ ). C was unrelated to social support strategies and Emotion Regulation, but strongly linked to Problem Solving ( $r = .30$ ).

To determine whether distinctions between types of social support are important, we used between-groups heterogeneity analyses, analogous to analyses of variance, to compare effects for Instrumental and Emotional Support (Lipsey & Wilson, 2000).  $Q_B$  indicates whether differences between mean effect sizes for each group are statistically significant. Differences between mean Instrumental and Emotional Support effects were found only for N, which predicted Emotional Support, but not Instrumental Support,  $Q_B(1, k = 28) = 13.79, p < .001$ , perhaps because negative affect spurs individuals to express feelings and seek sympathy. This difference was also significant in an RE analysis.

*Specific secondary control strategies.* E, A, O, and C were all more strongly linked to Cognitive Restructuring (correlations ranged from  $.14$  to  $.22$ ), than to Distraction (range =  $-.07$  to  $.09$ ) or Acceptance (range =  $.02$  to  $.08$ ). The direction of relations between N and secondary control strategies differed across strategies, with N associated positively with Distraction ( $r = .17$ ) and negatively with Cognitive Restructuring ( $r = -.16$ ) and Acceptance ( $r = -.10$ ).

*Specific disengagement strategies.* E was unrelated to all disengagement strategies. N was positively related to all disengagement strategies, with a stronger link to Wishful Thinking ( $r = .35$ ) and Withdrawal ( $r = .29$ ) than to Avoidance ( $r = .13$ ) or Denial ( $r = .18$ ). Further illustrating the need for attention to specific strategies, A and C were negatively associated with Denial ( $r = -.12$  and  $-.17$ , respectively), but not with Withdrawal ( $r = .08$  and  $.01$ , respectively). O was positively associated with Wishful Thinking ( $r = .11$ ) and Withdrawal ( $r = .10$ ), but not Denial ( $r = -.07$ ) or Avoidance ( $r = -.05$ ).

Broad measures of disengagement have been critiqued for including distraction strategies, which show a different pattern of relations to distress (Compas et al., 2001) and do not load with disengagement strategies in confirmatory factor analyses (Ayers et al., 1996; Connor-Smith et al., 2000). To determine whether measures combining distraction and disengagement

items cloud understanding of relations between personality and coping, we compared effect sizes for “pure” disengagement based on avoidance, denial, wishful thinking, and withdrawal to effect sizes for pure distraction. Significant differences between the two measures were found for E, N, and O. E was unrelated to Disengagement ( $r = -.04$ ), but tended toward a positive correlation with Distraction ( $r = .09$ ),  $Q_B(1, k = 51) = 33.11, p < .001$ . N was more strongly related to Disengagement ( $r = .28$ ) than to Distraction ( $r = .17$ ),  $Q_B(1, k = 74) = 41.99, p < .001$ . Although O showed essentially no relationship to either Disengagement ( $r = -.05$ ) or Distraction ( $r = .05$ ), the difference between them was significant,  $Q_B(1, k = 30) = 12.27, p < .001$ . In RE analyses, differences between Distraction and Disengagement remained significant for E and N, but not O.

*Emotion-focused coping.* Mean effects were calculated separately for Emotion Regulation (positive emotion-focused coping), Negative Emotion Focus, and Mixed Emotion Focus scales. Mixed and Negative Emotion Focus showed similar relationships to personality, but Negative Emotion Focus and Emotion Regulation differed in their relations to personality. N was unrelated to Emotion Regulation ( $r = .00$ ), but strongly related to Negative Emotion Focus ( $r = .41$ ),  $Q_B(1, k = 84) = 642.39, p < .001$ . A was unrelated to Emotion Regulation ( $r = .01$ ), but predicted less Negative Emotion Focus ( $r = -.09$ ),  $Q_B(1, k = 28) = 17.91, p < .001$ . C was associated with less Negative Emotion Focus ( $r = -.14$ ) and more Emotion Regulation ( $r = .08$ ),  $Q_B(1, k = 32) = 93.25, p < .001$ . Although E was essentially unrelated to emotion-focused coping, relations to Emotion Regulation ( $r = .03$ ) differed from relations to Negative Emotion Focus ( $r = -.05$ ),  $Q_B(1, k = 58) = 15.26, p < .001$ . No differences were found for O. In the more conservative RE analysis, mean effects for Emotional Regulation and Negative Emotion Focus remained significantly different for N, A, and C, but not for E.

*Coping through substance use.* Use of drugs and alcohol as a coping strategy was unrelated to E and O, but associated positively with N ( $r = .28$ ) and negatively with A and C, both  $r_s = -.18$ .

*Religious coping.* Religious coping was unrelated to E and N, but showed a small positive correlation with A ( $r = .12$ ) and a negative correlation with O ( $r = -.12$ ).

## Alternative Calculations of Mean Effect Sizes

Although heterogeneity of effect sizes was expected, mean effects were smaller than anticipated at all levels of coping. Heterogeneity and small effects could be caused either by poor reliability of personality and coping measures or by errors in the categorization of measures. Meta-analyses often adjust effect sizes for measure reliability in an attempt to determine what effect sizes would be under ideal research conditions (Hunter & Schmidt, 1990). This adjustment was not used for primary analyses because study-specific information about personality and coping measure reliability was available for only 16% of effects. Adjusting only those effect sizes would mean that effects were not truly comparable across studies. Adjusting the remaining 84% of effects based on estimates of measure reliability seemed more likely to introduce error than to improve

(Text continues on page 1093)

Table 3  
*Personality and Coping Codes for Studies Included in the Meta-Analysis*

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Affleck et al. (1992)	75	Adults with rheumatoid arthritis	NEO-PI	Daily Coping Inventory of Stone and Neale	S: Daily	R: arthritis pain
Amirkhan et al. (1995)	96	Psych students	NEO-PI	CSI	S: Retro	Self: personal problem from past 6 months
Atkinson & Violato (1994)	149	Canadian psych students	NEO-PI	WCCL	Sm: Daily	Self: responses to anger inducing events
Ball et al. (2002)	137	Adults with anxiety disorders & controls	TCI	Strategic Approach to Coping Scale	D	
Ben-Zur (1999)	90	Undergrads in Israel	STPI	COPE	D	
Blanchard et al. (1999)	39	Adults with psychotic disorders	General Temperament Survey	COPE	D	
Boland & Cappeliez, (1997)	109	Canadian senior citizens	NEO-PI	COPE	S: Retro	Self: most stressful event in last 3 months
Bolger (1990)	50	Adults from MCAT registration session	EPI	WCCL	S: Ongoing	R: MCAT exam
Bolger & Zuckerman (1995)	94	Psych students	EPI	WCCL-short	Sm: Daily	Self: worst interpersonal stressor of day
Bosworth et al. (2001)	204	Adult cardiac catheterization recipients	NEO-FFI	WCC-R	S: Retro	R: cardiac catheterization
Bouchard (2003)	400	French-Canadian couples	NEO-FFI	WCCL-R	Ddom	R: difficulties in marital relationship
Bouchard et al. (2004)	233	French-Canadian intro psych students	NEO-FFI	COPE; WCCL	D; Ddom	R: academic stressors
Brebner (2001)	113	Australian undergrads	Sensitivity to Punishment & Sensitivity to Reward; Quick Scales	CISS	D	
Brook et al. (1999)	249	Adult women attending methadone or AIDS clinic	Study specific: impulsivity	Study specific measure of engagement strategies	D	
Brown et al. (1986)	487	Elementary, middle, and high school students	STAI	Study specific: Open ended, coded for cognitive engagement	Hypo	
Butt et al. (2002)	39	Spouse caregivers of persons with Alzheimer's	NEO-FFI, Weinberger Adjustment Inventory	Caregiver Coping by Pruchno & Resch, 1989	Ddom	R: caring for spouse with Alzheimer's
Buunk (1982)	50	Dutch couples after an extramarital affair	Study specific: neuroticism	Study specific: Jealousy coping style	S: Retro	R: extramarital affair
Cairns & Wilson (1989)	430	Adults in Northern Ireland	EPQ-R	WCCL-R	S: Retro	R: political violence
Carver et al. (1989)	162	Undergrads	STAI	COPE	D	
Chartrand et al. (1993)	249	Psych students	NEO-PI	PSI	D	
Colder (2001)	80	Undergrads who drink alcohol	PANAS	DMQ	D	
Colder & O'Connor (2002)	106	Undergrads	Combined Behavioral Approach System & Inhibitory Control Scales	DMQ	D	
Comeau et al. (2001)	508	Canadian Jr. and Sr. high school students	STAI for Children	DMQ; Smoking Motives Questionnaire; Marijuana Motives Questionnaire	D; D; D	
Cooper et al. (2000)	1666	Young adults who consume alcohol	Study specific: composite of existing measures of neuroticism, extraversion, & impulsivity	DMQ	D	

Table 3 (continued)

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Costa & McCrae (1989)	75	Adults who endured a nuclear power plant accident; controls	NEO	Coping Questionnaire-revised (McCrae, 1984)	S: Retro	R: Three Mile Island nuclear accident
Cosway et al. (2000)	730	Scottish consultant doctors and farmers	NEO-FFI	CISS	D	
Davey (1993)	136	British undergrads	STAI	HDL, MBSS	D; Hypo	
Davey et al. (1992) #1	105	British undergrads	STAI	PSI; HDL	D; S: Retro	Self: most stressful event in recent years
Davey et al. (1992) #2	94	British undergrads	STAI	MBSS, PSI	Hypo; D	
David & Suls (1999)	95	Men aged 35-55	NEO-PI	Stone & Neale's Daily Coping Measure	Sm: Daily	Self: most bothersome event of day
De Jong et al. (1999)	358	Dutch employees	EPQ	UCL	D	
Deary et al. (1996)	333	Doctors in the UK	NEO-FFI	CISS	D	
Deary & Frier (1995)	141	Adult insulin treated diabetics in the UK	NEO-FFI	Coping with Health, Injuries, and Problems Scale	Ddom	R: health, injuries, and problems
Dorn & Matthews (1992)	50	Adult drivers in UK	EPQ	WCCL; Study specific: coping with driving, based on WCCL scales	Sm: Retro; Ddom	Self: responses to threat, loss, and challenge; R: driving stress
Ebert et al. (2002)	202	Undergrads	NEO-FFI	brief COPE	D	
Eksi (2004)	261	Turkish student teachers	NEO-PI short	Modified WCCL	D; S: Retro	Self
Ellenbogen & Hodgins (2004)	207	Canadian adults with affective disorders; controls	NEO-PI-R	CISS	D	
Elliott et al. (1994) #1	99	Psych students	EPI	PSI	D	
Elliott et al. (1994) #2	194	Psych students	NEO-PI	PSI	D	
Elliott et al. (1994) #3	341	Psych students	PANAS	PSI	D	
Endler & Parker (1990) #1	82	Canadian Psych students	STAI	MCI	D	
Endler & Parker (1990) #2	66	Canadian Psych students	EPQ, STAI	MCI	D	
Ferguson (2001)	154	Undergrads in UK	EPQ-R	COPE	D	
Fickova (2001)	242	Slovakian high school students	NEO-FFI; STAI	COPE; CISS	D; D	
Fickova (2002)	230	Slovakian high school students	PANAS; Study specific Negative Emotionality Scale	KIDCOPE, CSCY	D; D	
Fogarty et al. (1999) #1	153	Australian rotary club members	PANAS	Occupational Stress Inventory	D	
Fogarty et al. (1999) #2	98	Australian nurses	PANAS	Occupational Stress Inventory	D	
Fogarty et al. (1999) #3	106	Australian soldiers	PANAS	Occupational Stress Inventory	D	
Fogarty et al. (1999) #4	118	Australian Defence Force and Public Service personnel	NEO-FFI; PANAS	Occupational Stress Inventory	D	
Gilbert & Strong (1997)	62	Occupational therapy trainees in psychiatry placement	16PF	WCCL-R	S: Ongoing	R: preparing for placement
Gohm & Clore (2002) #1	116	Psych students	Big Five markers (Goldberg, 1990)	COPE	D	
Gohm & Clore (2002) #2	141	Psych students	Combined NEO-PI and EPI	COPE	D	
Gomez, Holmberg et al. (1999)	268	Australian secondary school students	Jr. EPQ	Coping Across Situations Questionnaire	D	
Gunthert et al. (1999)	197	Psych students	NEO-FFI	Modified Stone & Neale Daily Coping Assessment	S: Daily	Self: worst daily stressor

(Table continues)

Table 3 (continued)

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Hadjistavropoulos et al. (1998)	203	Canadian adults receiving workers comp for musculoskeletal pain	NEO-FFI	Coping with Health, Injuries, and Problems Scale	Ddom	R: musculoskeletal pain
Halamandaris & Power (1999)	183	Undergrads in UK	EPQ-R	WCCL	S: Retro	R: exam stress
Haren & Mitchell (2003)	60	Adult volunteers from university	NEO-FFI	CISS	D	
Heppner et al. (1995) #1	320	Psych students	STAI	PF-SOC	D	
Heppner et al. (1995) #2	93	Psych students	Big Five Unipolar Factor Markers	PF-SOC	D	
Holahan & Moos (1987)	848	Adults with unipolar depression; controls	Study specific: easygoing & extraverted traits	HDL	S: Retro	Self: most important problem in last year
Holahan & Moos (1991)	386	Community sample of adults	Study specific: easygoing & extraverted traits	HDL	S: Retro	Self: most important problem in last year
Hooker et al. (1994)	50	Spouse caregivers of patients with dementia	NEO-FFI	WCCL-R	Ddom	R: caregiving for someone with dementia
Horner (1996)	173	Community sample of adults	EPQ	CISS	D	
Horner (1998)	284	Psychology students	EPQ	WCCL-R	S: Retro	Self
Houtman (1990)	77	Dutch adult students at the Faculty of Human Movement Science	Amsterdamse Biografische Vragenlijst; STAI	UCL	D	
Hussong (2003)	86	Undergrads	NEO-FFI	DMQ	D	
Jelinek & Morf (1995)	66	Canadian psych students	NEO-PI	WCCL	S: Retro	Self
Johnson (2003)	409	Undergrads in UK	PANAS	Coping Styles Questionnaire	D	
Judge et al. (1999)	514	Managers experiencing a high degree of change	PANAS; NEO-FFI	Coping With Organizational Change Scale	Ddom	R: organizational change
Kahn & Cooper (1991)	225	Financial dealers in London	EPI	Occupational Stress Indicator	D	
Kallasmaa & Pulver (2000)	515	Estonian psychology students	NEO-PI	COPE	D	
Kardum & Hudek-Knežević (1996)	177	Croatian undergrads	EPQ	COPE	D	
Kardum & Krapic (2001)	265	Croatian primary school students	Jr. EPQ	Questionnaire for Measuring Adolescents Coping Styles	D	
Krohne et al. (2001) #1	90–259	American adults	NEO-FFI, STPI, STAI	MaCI	Hypo	
Krohne et al. (2001) #2	108–281	German adults	NEO-FFI, STPI, STAI	MaCI	Hypo	
Krohne et al. (2002) #1	90	American university students	State Trait Depression Scale	MaCI	Hypo	
Krohne et al. (2002) #2	129	German university students	State Trait Depression Scale	MaCI	Hypo	
Larsson (1989)	89	Swedish men in military	STAI	Study specific: positive thinking & negative emotion focus	S: Lab	R: performance test for operating an anti-aircraft missile
Lees & Ellis (1990)	53	Nurses, nursing students, & ex-nurses in Wales	16PF	WCCL-R	S: Retro	R: nursing stressor
Lengua & Long (2002)	101	3rd to 5th grade children	Early Adolescent Temperament Questionnaire; Child Behavior Questionnaire	CCSC	D	

Table 3 (continued)

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Lengua & Sandler (1996)	258	Children of divorce	DOTS-R	CCSC	D	
Lengua et al. (1999)	223	Children of divorce	EAS; Child Behavior Questionnaire; DOTS-R	CCSC child and parent report	D	
Loukas et al. (2000)	692	Children of alcoholics & controls	NEO-FFI	DMQ	D	
Lu & Chen (1996)	581	Chinese adults	EPQ	WCCL short	S: Retro	Self
Lysaker et al. (2003)	71	Adults with psychotic disorders	NEO-FFI	WCQ	S: Retro	Self: recent stressor
Lysaker et al. (2004)	59	Adults with psychotic disorders	NEO-FFI	WCQ	S: Retro	Self: recent stressor
Manyande & Salmon (1992)	40	British adults recovering from abdominal surgery	STAI	Study specific: modification of Billings & Moos (1981) Coping Scale	S: Daily	R: pain following abdominal surgery
McCormick et al. (1998)	2676	Substance abusing male veterans	NEO-PI	WCCL	S: Retro	Self
McCrae & Costa (1986) #1	255	Adults in study of aging	NEO	WCQ + 50 items	S: Retro	Self: a loss, threat, or challenge in last year
McCrae & Costa (1986) #2	151	Adults in study of aging	NEO	Study specific: 50 items assessing 27 strategies	Sm: Retro	Self: loss, threat, & challenge in last year
McWilliams et al. (2003)	298	Adults with major depressive disorder	NEO-FFI	CISS	D	
Medvedova (1998)	207	Slovakian secondary school students	Big Five Scales for the California Child Q-Set	CCSC	D	
Miro & Raich (1992)	40	Spanish psych students	EPI	Study specific: cognitive pain-control strategies	S: Lab	R: cold pressor task
Morelli et al. (2000)	132	Italian men attending a fertility clinic	EPQ	CISS	D	
Morgan et al. (1995)	44	Adult flood victims in Scotland	EPQ-R	CISS	D	
Murberg et al. (2002)	119	Norwegian adults with congestive heart failure	EPQ	COPE	D	
Muris et al. (1994)	70	Dutch undergrads	STAI, EPQ-R short	MBSS	Hypo	
Nakano (1992)	176	Japanese undergrads	16PF	WCCL	S: Retro	Self
Newth & DeLongis (2004)	69	Canadian adults with rheumatoid arthritis	Interpersonal Adjective Scales- Big Five	modified WCCL-R	S: Daily	R: arthritis pain
Nigro (1996)	203	Italian adolescents	STAI	CSI	Hypo	
Nyamathi et al. (1992)	100	Spouses of partners with cardiac problems	Spousal Coping Instrument Personality Factors	Spousal Coping Instrument	D	
O'Brien & DeLongis (1996)	270	Undergrads	NEO-FFI	WCCL	S: Retro	Self: event from last week
Parkes (1986)	135	British first-year female students nurses	EPQ	WCCL	S: Retro	R: work stressor
Patrick & Hayden (1999)	596	Caregivers of an adult child with a chronic disability	Modified NEO-PI-R	Caregiver coping (Pruchno & Resch, 1989)	Ddom	R: caring for disabled adult child
Penley & Tomaka (2002)	97	Psychology students	NEO-PI	Modified COPE	S: Lab	R: giving a speech
Pittenger (2004)	313	Psychology students	NEO-FFI	COPE	D	
Prokopcakova (2004)	21	Slovakian undergrads	STPI	Strategy of Procedure in Demanding Situations	Hypo	
Ratsep et al. (2000) #1	49	Estonian adults	NEO-PI	COPE	D	
Ratsep et al. (2000) #2	49	Estonian multiple sclerosis patients	NEO-PI	COPE	Ddom	R: multiple sclerosis

(Table continues)

Table 3 (continued)

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Rim (1986)	174	Undergrads & adults in Israel	EPQ	WCCL-R	S: Retro	Self
Rim (1987)	167	Israeli graduate students & their friends/relatives	EPQ	WCCL-R; Plutchik's scale for the measurement of coping styles	S: Retro	Self
Rose et al. (2003)	131	Assisted living staff in UK	EPI	WCCL-R short	S: Retro	Self
Ruchkin et al. (1999) #1	178	Russian adolescents in correctional institution	TCI	CSCY	D	
Ruchkin et al. (1999) #2	91	Russian secondary school students	TCI	CSCY	D	
Saklofske & Kelly (1995)	193	Canadian undergrads	EPQ	CISS	D	
Saklofske & Yackulic (1989)	258	Canadian undergrads	EPQ	Coping With Loneliness	Ddom	R: loneliness
Sandal et al. (1999)	75	Submariners and office workers in Norwegian navy	Personality Characteristics Inventory	UCL	D	
Sheikh (2004)	110	American & British adult cardiac patients	NEO-FFI	WCCL	S: Retro	R: heart attack/surgery
Shewchuk et al. (1999)	126	Psychology students	NEO-PI	WCCL	S: Retro	Self: most stressful event in last 2 weeks
Smith et al. (1989) #1	103	Psychology students	A-Trait	WCCL-R	S: Retro	Self: recent stressor
Smith et al. (1989) #2	194	Psychology students	A-Trait	WCCL-R	S: Retro	Self: recent stressor
Spinhoven et al. (1991)	111	Dutch chronic tension headache sufferers	Dutch Personality Questionnaire	Coping Strategy Questionnaire	Ddom	R: headache pain
Stewart & Devine (2000)	256	Canadian undergrads who consume alcohol	NEO-PI-R	DMQ-R	D	
Stewart et al. (2001)	154	Canadian undergrads who consume alcohol	NEO-FFI	DMQ-R	D	
Stewart & Zeitlin (1995)	314	Canadian psych students	STAI	DMQ	D	
Streleau (1996)	97	Undergrads	Formal Characteristics of Behavior-Temperament Inventory; EPQ-R	CISS	D	
Strizeneec & Ruisel (1998)	448	Slovakian high school students	FFPI, NEO-FFI	Study specific: religious coping	D	
Terry (1991)	138	Australian psychology students	EASI-III	WCCL-modified	S: Retro	R: psychology exam
Theakston et al. (2004)	733	Canadian undergrads	Big Five items from the International Personality Item Pool	DMQ-R	D	
Uehara et al. (1999)	60	Japanese outpatients with depressive disorder	Munich Personality Test	CISS	D	
Van Heck (1990)	165	Dutch adults	Guilford-Zimmerman Temperament Survey-short; Adolescent Temperament List; EASI-III; Streleau Temperament Survey; Temporal Traits Inventory	WCCL	D	
Van Zuuren et al. (1999)	68	Dutch adults undergoing dental treatment	STAI	MBSS; Threatening Medical Situations Inventory	Hypo; Hypo	
Van Zuuren & Wolfs (1991)	44	Dutch psych students	STAI	MBSS	Hypo	
Vickers et al. (1989)	1119	Navy recruits in basic training	NEO-PI	Modified WCCL	S: Ongoing	R: basic training

Table 3 (continued)

Study	N	Sample description	Personality measures	Coping measures	Coping focus & timeframe	Stressor selector & stress description
Vollrath et al. (1995)	229	Norwegian psychiatric outpatients	Basic Character Inventory	COPE	D	
Vollrath et al. (1998)	154	Norwegian psychiatric outpatients	Basic Character Inventory	COPE	D	
Watson & Hubbard (1996)	375	Psychology students	NEO-FFI, Big Five Inventory	COPE, PSI	D	
Wearing & Hart (1996)	330	Australian police officers	NEO-PI	Coping Response Inventory	S: Retro	R: work stressor Self: non-work stressor
Wills et al. (1995)	1826	7th graders	DOTS-R	COPE; Study specific scales for cognitive, behavioral, avoidant strategies and substance use	D; D	

*Note.* Personality measures: DOTS-R = Dimensions of Temperament Survey—Revised; EAS = Emotionality, Activity, Sociability Scale. EASI-III = Emotionality, Activity, Sociability, and Impulsivity Temperament Scale—3rd ed.; EPI = Eysenck Personality Inventory; EPQ = Eysenck Personality Questionnaire; EPQ-R = Eysenck Personality Questionnaire—Revised; FFPI = Five-Factor Personality Inventory; NEO = Neuroticism, Extraversion, Openness Inventory; NEO-FFI = NEO Five-Factor Inventory; NEO-PI = NEO Personality Inventory; NEO-PI-R = NEO Personality Inventory—Revised; PANAS = Positive and Negative Affect Schedule; STAI = State-Trait Anxiety Inventory; STPI = State-Trait Personality Inventory; TCI = Temperament and Character Inventory. Coping measures: CCSC = Children’s Coping Strategies Checklist, CISS = Coping Inventory for Stressful Situations; COPE = Coping Orientation to Problems Experienced; CSCY = Coping Scale for Children and Youth; CSI = Coping Strategy Indicator; DMQ = Drinking Motives Questionnaire; HDL = Health and Daily Living Form; MaCI = Mainz Coping Inventory; MBSS = Miller Behavioral Style Scale; MCI = Multidimensional Coping Inventory; PF-SOC = Problem Focused Style of Coping; PSI = Problem Solving Inventory; UCL = Utrecht Coping List; WCCL = Ways of Coping Checklist; WCQ = Ways of Coping Questionnaire. Coping focus: D = Dispositional coping; Ddom = Dispositional coping with a single domain of stress; S = situation specific coping; Sm = average of responses to multiple specific stressors. Stressor selector: R = researcher-selected stressor, S = self-selected stressor; retro = retrospective; hypo = hypothetical.

estimates of the true effect size. However, to explore the potential impact of adjusting for reliability, we calculated mean effects for a subsample of data (74% of the full sample) for which measure reliability either was available or could be estimated by averaging reliability data from other studies in the sample or obtaining it from measure development studies. The mean Cronbach’s alpha was .79 for personality measures and .74 for coping measures. Uncorrected mean effects from this subsample were compared to mean effects corrected for measure reliability. The absolute value of effects increased by an average of .04 at the broad Engagement and Disengagement level, by .04 at the Primary and Secondary Control Engagement and Narrow Disengagement level, and by .04 at the coping strategy level. The effect size increase exceeded .10 only for relations between N and Narrow Disengagement, and the coping strategies Wishful Thinking, Withdrawal, and Negative Emotion focus.

Because it was not always possible to review items for each coping subscale, some scales may have been inappropriately categorized, muddying categories and diminishing the apparent magnitude of relations between personality and coping. To explore the potential impact of coding errors, we calculated mean effects in a “high confidence” data subset. Inclusion in this subset required item review for both personality and coping measures and required the coping scale to be an unambiguous fit for the code assigned. In addition, the personality scale had to be a broad measure of a Big Five trait, assessing a range of facets, rather than simply one element of a Big Five trait. This reduced the likelihood that results would be skewed by overrepresentation of specific facets of a trait (e.g., including trait anxiety as a measure of N may give undue weight to this facet

in the full data set). In this subset, coping was assessed using a version of the COPE (Carver, Scheier, & Weintraub, 1989), the Ways of Coping Checklist (Folkman & Lazarus, 1985; Folkman et al., 1986), or the Coping Inventory for Stressful Situations (Cosway et al., 2000) for 81% of effect size. For 87% of effect size, personality was assessed with a measure from the NEO (Costa & McCrae, 1992) or Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975; Eysenck & Eysenck, 1991) families.

A total of 1,574 effect sizes (59% of the original data set) met the “high confidence” criteria. As seen in Tables 5, 6, and 7, results from this high-confidence sample are virtually identical to those from the full data set, suggesting that the small magnitude and heterogeneity of effects are not primarily a result of coding errors. Because results from data subsets did not differ substantially from results in the full sample, moderators were assessed in the full sample to maximize power.

#### *Moderation by Age, Sex, Stress Severity, and Coping Focus*

Because information was available from all studies about age, sex (percentage male), stress severity (high or average), and coping focus (dispositional or situation-specific coping), regression models were used to explore moderation by all four variables simultaneously. Testing moderation between all 76 combinations of personality and coping strategies in Table 7 was not feasible, as some pairings of personality and coping did not show sufficient variability in the moderators to be tested. Thus, moderation was tested only for pairings of coping and

Table 4  
*Characteristics of Samples Included in the Meta-Analysis*

Characteristic	<i>N</i>	Sample %
Year of publication		
1980–1989	24	14.5
1990–1999	90	54.5
2000–2004	51	30.9
Region in which study was conducted:		
North America	80	48.5
Western Europe	43	26.1
Eastern Europe	17	10.3
Australia	10	6.1
Israel	6	3.6
Middle East	4	2.4
Asia	3	1.8
Mixed nationalities	2	1.2
Population sampled		
Children	19	11.5
Stressed children	3	1.8
Undergraduates	59	35.8
Adults	46	27.9
Stressed adults	38	27.0
Sample size		
<50	24	14.5
51–150	78	47.3
151–300	42	25.5
301–450	10	6.1
>450	11	6.7
Mean participant age		
17 and under	22	13.3
18–25	70	42.4
26–35	17	10.3
36–45	41	24.8
46+	15	9.1
Sex		
91%–100% male	29	17.6
61%–90% male	11	6.7
41%–60% male	50	30.3
11%–40% male	46	27.9
0%–10% male	29	17.6
Coping focus <sup>a</sup>		
Dispositional responses	103	59.9
Specific stressor: researcher-selected	25	14.5
Specific stressor: self-selected	31	18.0
Hypothetical situation	13	7.6
Coping report timeframe for specific stressors <sup>a</sup>		
Retrospective	41	23.8
Ongoing stressor	3	1.7
Daily report	12	7.0

<sup>a</sup> Some samples provided more than one coping focus or timeframe.

personality for which 20 or more effect sizes were available.<sup>3</sup> Mixed Emotion Focused Coping was excluded because it combined Emotion Regulation and Negative Emotion Focused Coping, and Substance Use was excluded because not all levels of moderators were present. Regressions were statistically significant (indicated by  $Q_{\text{model}}$ ) for 20 of the 25 models (Table 8), with age, sex, stress severity, and coping focus explaining an average of 22% of the variance in relations between personality and coping. However, significant heterogeneity (indicated by  $Q_{\text{residual}}$ ) remained to be explained for all but three models.

*Age.* Age was a significant moderator in 12 regressions, including relations of N, A, O, and C with Problem Solving; C with Social Support; O with Distraction; N, O, and C with Cognitive

Restructuring; and E, N, and C with Negative Emotion Focus. Overall, relations between personality and coping were stronger in younger samples.

*Sex.* Sex was a significant moderator for only five regressions. Effects were stronger for men for relations of N with Negative Emotion Focus and C with Cognitive Restructuring. Effects were stronger for women for relations of N with Problem Solving, E with Social Support, and O with Distraction.

*Stress severity.* Stress severity was a significant moderator for 13 regressions, moderating relations of E, N, and A with Problem Solving of E, N, and C with Social Support; E with Distraction; E, O, and C with Cognitive Restructuring; and E, N, and C with Negative Emotion Focus. To illustrate the impact of stress severity, we calculated mean effects separately for average and high-stress groups (Table 9). These data do not exactly parallel the regressions, as they do not account for age, sex, or coping focus. Although the between-groups difference is small, relations between personality and coping are typically stronger in high-stress groups.

*Coping focus.* Coping focus was a significant moderator for 13 regressions, including relations of E, N, A, and C with Problem Solving; E and N with Social Support; E with Emotion Regulation; E and N with Distraction; E and O with Cognitive Restructuring; and E and N with Negative Emotion Focus. As shown in Table 9, personality more strongly predicted dispositional than situational coping. Although the magnitude of correlations did not differ substantially in most cases, there are clear differences for Negative Emotion Focus and Denial.

#### *Moderation by Coping Report Timeframe, Stressor Selector, Ethnicity, and Country of Origin*

Ideally, all potential moderators would have been tested simultaneously. However, some moderators could be tested only at the broad Engagement–Disengagement Coping level, either because many studies failed to report information about potential moderators (e.g., ethnicity) or because there was limited variation across studies (e.g., coping timeframe). Tests at this broad level are problematic, as specific strategies within a broad coping category differ in relation to personality. However, these analyses may provide clues about factors warranting further investigation. As expected for tests of single moderators at the broad engagement–disengagement coping level, significant heterogeneity remained to be explained in all cases.

*Coping report timeframe.* Retrospective reports of responses to specific stressors were compared to daily or immediate reports. Because daily report studies are rare, there were no daily report studies of Disengagement Coping. For Engagement Coping, reporting timeframe moderated relations between N and Engagement,  $Q_B(1, k = 47) = 23.92, p < .001$ , with a mean effect size of .00 for retrospective and .16 for daily reports. Reporting timeframe also moderated relations between C and Engagement,  $Q_B(1,$

<sup>3</sup>To maximize the number of effect sizes available for social support analyses, we included measures of broad social support, emotional social support, and instrumental social support. Because earlier analyses demonstrated different relations of N with Instrumental and Emotional Support, separate tests of moderation were done. Findings paralleled results from Mixed Support analyses, so to facilitate comparison across personality traits, only the Mixed Support data are presented.

Table 5

## Mean Weighted Correlations Between Personality and Broad Measures of Engagement and Disengagement Coping

Personality measure	Coping	Full sample			High confidence sample				
		Mean <i>r</i>	Samples (N)	Participants (N)	95% CI <sup>a</sup>	Mean <i>r</i>	Samples (N)	Participants (N)	95% CI <sup>a</sup>
Extraversion	Engagement	.15	97	20,995	<b>.13, .16**</b>	.12	63	13,952	<b>.10, .14</b>
	Broad Disengagement	-.04	57	16,337	<b>-.06, -.02***</b>	-.05	37	10,063	<b>-.07, -.03***</b>
Neuroticism	Engagement	.00	136	24,463	.00, .02***	.05	78	16,120	<b>.03, .07***</b>
	Broad Disengagement	.27	86	20,009	<b>.26, .29***</b>	.26	50	11,993	<b>.24, .28***</b>
Agreeableness	Engagement	.05	45	11,392	<b>.03, .07**</b>	.04	38	10,345	<b>.02, .06</b>
	Broad Disengagement	-.13	29	9,063	<b>-.15, -.11***</b>	-.13	24	7,890	<b>-.15, -.10***</b>
Openness	Engagement	.10	49	12,317	<b>.08, .11***</b>	.10	39	10,686	<b>.07, .12**</b>
	Broad Disengagement	-.02	29	8,770	-.04, .00**	-.03	25	8,231	-.05, .00
Conscientiousness	Engagement	.11	55	14,298	<b>.10, .13***</b>	.10	38	10,451	<b>.08, .13***</b>
	Broad Disengagement	-.15	35	13,236	<b>-.17, -.13***</b>	-.16	24	7,996	<b>-.19, -.14***</b>

Note. Bold text in the 95% confidence index (CI) column indicates that the CI excludes zero whether fixed or random effects models are used.

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

$k = 12$ ) = 4.72,  $p < .05$ , with a mean effect size of .10 for retrospective reports and  $-.05$  for daily reports. In RE analyses, results remained significant for N but not for C.

*Self-selected versus researcher-selected stressors.* Personality may predict coping partly because personality influences the types of events people experience and find stressful. Thus, correlations should be stronger in studies assessing coping with participant-selected specific stressors (typically the worst event in the last year) than in studies assessing coping with specific researcher-selected stressors (e.g., a laboratory stressor or a specific problem shared by all in the sample). Source of stressor selection moderated relations between Engagement Coping and E and C, with a larger effect size for researcher-selected stressors. For E,  $Q_B(1, k = 32) = 4.10$ ,  $p < .04$ ;  $r = .19$  for researcher-selected and  $r = .14$

for self-selected stressors. Similarly, for C,  $Q_B(1, k = 13) = 14.42$ ,  $p < .001$ ; with  $r = .22$  and  $r = .07$ , for researcher-selected and self-selected stressors, respectively. Stressor selector also moderated relations between Disengagement Coping and A and C, with larger effect size for self-selected stressors than for researcher-selected stressors. For A,  $Q_B(1, k = 9) = 8.36$ ,  $p < .01$ , with  $r = -.17$  and  $-.07$ , respectively. For C,  $Q_B(1, k = 8) = 12.81$ ,  $p < .001$ , with  $r = -.19$  and  $-.05$ , respectively. In the RE model, stressor-selector remained a significant moderator of relations between C and Disengagement.

*Ethnic diversity.* Ethnic diversity (percentage European American) was explored only in American samples to avoid confounding ethnicity and country of origin. In regression analyses, diversity was not a moderator for Engagement Coping, but did moderate

Table 6

## Mean Weighted Correlations Between Personality and Primary Control Engagement Coping, Secondary Control Engagement Coping, and Narrow Disengagement Coping

Personality measure	Coping	Full sample			High confidence sample				
		Mean <i>r</i>	Samples (N)	Participants (N)	95% CI	Mean <i>r</i>	Samples (N)	Participants (N)	95% CI <sup>a</sup>
Extraversion	Primary Control	.19	77	17,377	<b>.17, .20***</b>	.18	60	13,653	<b>.16, .20***</b>
	Secondary Control	.15	48	10,793	<b>.13, .18***</b>	.16	37	9,571	<b>.14, .18***</b>
	Narrow Disengagement	-.04	22	3,650	<b>-.07, -.01</b>	-.04	16	2,767	-.08, .00
Neuroticism	Primary Control	-.06	107	20,144	<b>-.08, -.05***</b>	-.06	72	15,329	<b>-.07, -.04***</b>
	Secondary Control	-.03	65	12,474	-.05, -.02***	-.05	45	10,472	-.07, -.03***
	Narrow Disengagement	.28	33	5,444	<b>.26, .31***</b>	.28	20	3,170	<b>.24, .31***</b>
Agreeableness	Primary Control	.07	39	10,526	<b>.05, .09***</b>	.07	35	10,045	<b>.04, .08**</b>
	Secondary Control	.07	26	8,601	<b>.04, .09***</b>	.07	23	8,182	<b>.05, .10***</b>
	Narrow Disengagement	-.07	10	1,837	-.12, -.02	-.09	8	1,568	<b>-.14, -.04</b>
Openness	Primary Control	.11	42	10,937	<b>.09, .13*</b>	.11	36	10,386	<b>.09, .13*</b>
	Secondary Control	.11	29	9,013	<b>.08, .13**</b>	.11	22	8,123	<b>.08, .13**</b>
	Narrow Disengagement	-.05	10	1,964	-.09, -.01**	-.08	8	1,568	-.13, -.03*
Conscientiousness	Primary Control	.18	44	12,647	<b>.16, .20***</b>	.19	35	10,151	<b>.17, .21***</b>
	Secondary Control	.09	29	8,843	.07, .12***	.10	23	8,288	.07, .12***
	Narrow Disengagement	-.10	11	2,002	<b>-.15, -.06***</b>	-.14	9	1,733	<b>-.18, -.10***</b>

Note. Bold text in the 95% confidence index (CI) column indicates that the CI excludes zero whether fixed or random effects models are used.

<sup>a</sup>Significance measured is for test of heterogeneity (Q).

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 7  
Mean Weighted Correlations Between Personality and Specific Coping Strategies

Personality	Coping	Full sample				High confidence sample			
		Mean <i>r</i>	Samples ( <i>N</i> )	Participants ( <i>N</i> )	95% CI <sup>a</sup>	Mean <i>r</i>	Samples ( <i>N</i> )	Participants ( <i>N</i> )	95% CI <sup>a</sup>
Extraversion									
Primary Control	Problem solving	.20	70	14,844	<b>.18, .21</b> ***	.19	54	12,367	<b>.17, .21</b> ***
	Instrumental social support	.22	12	2,237	<b>.18, .26</b>	.24	10	1,841	<b>.20, .29</b>
	Emotional social support	.25	11	1,936	<b>.21, .29</b> *	.25	11	1,936	<b>.21, .29</b> *
	Mixed social support	.24	35	10,533	<b>.22, .26</b> ***	.26	27	8,231	<b>.24, .29</b> ***
	Emotion regulation	.03	22	5,959	.00, .06***	.01	18	5,334	-.02, .05***
Secondary Control	Distraction	.09	29	4,987	<b>.06, .12</b> ***	.06	22	3,954	<b>.03, .09</b>
	Cognitive restructuring	.22	32	8,255	<b>.20, .25</b> ***	.23	26	7,554	<b>.20, .25</b> ***
	Acceptance	.02	11	1,936	-.02, .07*	.02	11	1,936	-.02, .07*
Disengagement	Avoidance (narrow)	-.04	4	563	-.13, .04*	—	—	—	—
	Denial	-.02	16	2,685	-.06, .01	-.05	10	1,802	-.09, .00
	Wishful thinking	-.03	12	1,810	-.07, .02	.00	6	927	-.07, .06
	Withdrawal	-.05	6	836	-.12, .02	-.07	2	210	-.20, .07
Miscellaneous	Mixed emotion focus	.08	20	2,369	.04, .12***	.06	13	1,401	.01, .11***
	Negative emotion focus	-.05	36	9,392	-.07, -.02***	-.07	28	6,734	<b>-.09, -.04</b> ***
	Religious coping	.02	13	2,570	-.02, .06**	.03	9	1,726	-.02, .08***
	Substance use	-.04	17	6,774	-.06, -.01***	-.10	11	2,741	-.12, -.05***
Neuroticism									
Primary Control	Problem solving	-.13	97	18,940	<b>-.14, -.12</b> ***	-.15	65	13,804	<b>-.17, -.14</b> ***
	Instrumental social support	.03	15	2,702	-.01, .07	.05	11	1,915	.01, .10
	Emotional social support	.11	15	2,599	<b>.08, .15</b>	.12	13	2,208	<b>.07, .16</b> *
	Mixed social support	-.01	43	10,012	-.03, .01***	-.01	31	8,840	-.03, .01***
	Emotion regulation	.00	30	7,074	-.02, .03***	.00	24	6,031	-.03, .03***
Secondary Control	Distraction	.17	41	6,487	<b>.14, .19</b> ***	.18	30	4,981	<b>.16, .21</b> ***
	Cognitive restructuring	-.16	43	9,419	<b>-.18, -.14</b> ***	-.19	31	8,031	<b>-.21, -.16</b> ***
	Acceptance	-.10	17	2,827	<b>-.13, -.06</b> ***	-.09	14	2,390	-.13, -.05***
Disengagement	Avoidance (narrow)	.13	4	563	.05, .21***	—	—	—	—
	Denial	.18	21	3,407	<b>.15, .21</b> ***	.23	13	2,133	<b>.19, .27</b>
	Wishful thinking	.35	19	2,957	<b>.32, .38</b> ***	.37	8	1,072	<b>.32, .42</b> **
	Withdrawal	.29	7	910	<b>.23, .34</b>	.29	3	284	<b>.18, .39</b>
Miscellaneous	Mixed emotion focus	.22	27	3,109	<b>.18, .25</b> ***	.29	16	1,747	<b>.24, .33</b> ***
	Negative emotion focus	.41	54	9,994	<b>.39, .43</b> ***	.45	36	7,728	<b>.43, .47</b> ***
	Religious coping	.01	20	3,564	-.02, .05*	.01	14	2,329	-.03, .05*
	Substance use	.28	24	7,110	<b>.26, .30</b> ***	.23	14	3,072	<b>.20, .27</b> ***
Agreeableness									
Primary Control	Problem solving	.09	37	10,159	<b>.06, .11</b> **	.08	33	9,678	<b>.06, .11</b> **
	Instrumental social support	.08	8	1,568	<b>.03, .13</b>	.08	8	1,568	<b>.03, .13</b>
	Emotional social support	.12	9	1,663	<b>.08, .17</b>	.12	9	1,663	<b>.08, .17</b>
	Mixed social support	.11	20	7,207	<b>.09, .14</b> **	.11	16	4,877	<b>.08, .14</b>
	Emotion regulation	.01	12	4,675	-.02, .05	.01	12	4,675	-.02, .05
Secondary Control	Distraction	-.05	16	3,541	-.08, -.02	-.06	14	3,197	<b>-.10, -.03</b>
	Cognitive restructuring	.14	18	6,648	<b>.12, .17</b> ***	.14	18	6,648	<b>.12, .17</b> ***
	Acceptance	.08	9	1,663	<b>.03, .13</b>	.08	9	1,663	<b>.03, .13</b>
Disengagement	Denial	-.12	6	1,358	<b>-.17, -.06</b>	-.12	6	1,358	<b>-.17, -.06</b>
	Withdrawal	.08	4	479	-.01, .17	.17	2	210	<b>.03, .29</b>
Miscellaneous	Mixed emotion focus	-.09	8	645	<b>-.17, -.02</b>	-.09	8	645	<b>-.17, -.02</b>
	Negative emotion focus	-.09	16	4,877	<b>-.12, -.06</b> ***	-.09	16	4,877	<b>-.12, -.06</b> ***
	Religious coping	.12	9	1,901	<b>.08, .17</b> **	.15	7	1,453	<b>.10, .20</b> **
	Substance use	-.18	11	3,279	<b>-.21, -.15</b> **	-.16	10	2,587	<b>-.20, -.12</b> *
Openness to Experience									
Primary Control	Problem solving	.14	38	10,512	<b>.12, .16</b> ***	.15	34	10,019	<b>.13, .17</b> **
	Instrumental social support	.06	10	1,964	<b>.01, .10</b>	.06	8	1,568	<b>.01, .11</b>
	Emotional social support	.08	9	1,663	<b>.03, .12</b>	.08	9	1,663	<b>.03, .12</b>
	Mixed social support	.06	18	6,854	<b>.04, .09</b>	.06	15	6,667	<b>.03, .09</b>
	Emotion Regulation	.06	14	5,071	<b>.03, .10</b>	.07	12	4,675	<b>.03, .10</b>

Table 7 (continued)

Personality	Coping	Full sample				High confidence sample			
		Mean <i>r</i>	Samples (N)	Participants (N)	95% CI <sup>a</sup>	Mean <i>r</i>	Samples (N)	Participants (N)	95% CI <sup>a</sup>
Secondary control	Distraction	.05	20	4,034	.01, .08**	.03	14	3,197	.00, .07**
	Cognitive restructuring	.15	20	7,038	<b>.12, .17*</b>	.15	17	6,589	<b>.12, .17</b>
	Acceptance	.07	9	1,663	.02, .12***	.07	9	1,663	.02, .12***
Disengagement	Avoidance	-.05	2	396	-.14, .05	—	—	—	—
	Denial	-.07	8	1,754	-.12, -.02*	-.11	6	1,358	<b>-.16, -.05</b>
	Wishful thinking	.11	2	396	.01, .21*	—	—	—	—
Miscellaneous	Withdrawal	.10	4	606	<b>.02, .18</b>	.11	2	210	-.03, .24
	Mixed emotion focus	.10	10	1041	.03, .16*	.06	8	645	-.02, .14
	Negative emotion focus	.03	20	5,370	.00, .06***	.03	16	4,877	.00, .06***
	Religious coping	-.12	11	2,297	<b>-.16, -.08***</b>	-.08	7	1,453	-.14, -.03***
	Substance use	.04	12	2,983	.01, .08***	.03	10	2,587	-.01, .07***
Conscientiousness									
Primary Control	Problem solving	.30	41	10,454	<b>.28, .32***</b>	.32	33	9,784	<b>.30, .34***</b>
	Instrumental social support	.08	8	1,568	<b>.03, .13</b>	.08	8	1,568	<b>.03, .13</b>
	Emotional social support	.06	9	1,663	.01, .10**	.06	9	1,663	.01, .10**
	Mixed social support	.09	23	9,110	.07, .12***	.09	15	6,667	.06, .12***
	Emotion regulation	.08	13	4,840	<b>.04, .11**</b>	.08	13	4,840	<b>.04, .11**</b>
Secondary Control	Distraction	-.07	18	3,638	-.11, -.04***	-.10	14	3,197	<b>-.14, .07**</b>
	Cognitive restructuring	.20	18	6,754	<b>.17, .22***</b>	.20	18	6,754	<b>.17, .22***</b>
Disengagement	Acceptance	.07	9	1,663	.02, .12**	.07	9	1,663	.02, .12**
	Denial	-.17	6	1,358	<b>-.22, -.12*</b>	-.17	6	1,358	<b>-.22, -.12*</b>
Miscellaneous	Withdrawal	.01	4	479	-.08, .10	-.04	2	210	-.18, .10
	Mixed emotion focus	-.13	8	645	<b>-.20, -.05</b>	-.13	8	645	<b>-.20, -.05</b>
	Negative emotion focus	-.14	19	6,800	<b>-.16, -.11***</b>	-.15	16	4,877	<b>-.18, -.12***</b>
	Religious coping	.09	9	1,901	<b>.05, .14</b>	.09	7	1,453	.04, .14*
	Substance use	-.18	14	6,810	<b>-.20, -.15***</b>	-.22	10	2,587	<b>-.26, -.19*</b>

Note. Bold text in the 95% confidence index (CI) column indicates that the CI excludes zero whether fixed or random effects models are used. Dashes indicate an insufficient number of effect sizes for analysis.

<sup>a</sup> Significance measured is for test of heterogeneity (Q).

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

relations between Disengagement and E, N, A, and C. For E,  $Q_{\text{model}} = 4.24$ ,  $p < .05$ ,  $R^2 = .09$ ,  $\beta = -.30$ ,  $p < .05$ , with analyses based on 17 samples. For N,  $Q_{\text{model}} = 29.57$ ,  $p < .001$ ,  $R^2 = .29$ ,  $\beta = -.53$ ,  $p < .001$ , with analyses based on 18 samples. For A,  $Q_{\text{model}} = 9.34$ ,  $p < .01$ ,  $R^2 = .51$ ,  $\beta = .71$ ,  $p < .01$ , with analyses based on 6 samples. And for C,  $Q_{\text{model}} = 13.31$ ,  $p < .001$ ,  $R^2 = .26$ ,  $\beta = .51$ ,  $p < .001$ , with analyses based on 11 samples. In RE analyses, diversity remained a significant moderator for N, A, and C but not for E. Overall, diversity seemed to have a protective effect, weakening the positive relationship between N and Disengagement and strengthening the negative relationship of A and C with Disengagement.

*Country of origin.* Because few samples were drawn from non-Western countries, country of origin analyses compared samples from North America, Western Europe, Eastern Europe, and Australia. Country moderated relations between Engagement coping and all five personality traits. For E,  $Q_B(3, k = 87) = 38.31$ ,  $p < .001$ , with a mean correlation of .16 for North America, .07 for Western Europe, .12 for Eastern Europe, and .27 for Australia. For N,  $Q_B(3, k = 128) = 34.59$ ,  $p < .001$ , with a mean correlation of -.02 for North America, .06 for Western Europe, .05 for Eastern Europe, and -.08 for Australia. For A,  $Q_B(3, k = 42) = 10.12$ ,  $p < .05$ , with a mean correlation of .06 for North America, .01 for Western Europe, .04 for Eastern Europe, and .19 for Australia. For

O,  $Q_B(3, k = 44) = 17.53$ ,  $p < .001$ , with a mean correlation of .12 for North America, .04 for Western Europe, .01 for Eastern Europe, and .12 for Australia. For C,  $Q_B(3, k = 52) = 49.77$ ,  $p < .001$ , with a mean correlation of .15 for North America, -.01 for Western Europe, .07 for Eastern Europe, and .32 for Australia. Overall, correlations between personality and Engagement were twice as strong in Australian samples, with a negative correlation between N and Engagement only in Australian samples. Tests of moderation for E, N, O, and C remained significant in an RE model.

Country of origin also moderated relations between Disengagement Coping and N and A. Relations between N and Disengagement were weaker for samples from Western Europe ( $r = .18$ ) and Australia ( $r = .09$ ) than for samples from North America ( $r = .30$ ) and Eastern Europe ( $r = .25$ ),  $Q_B(3, k = 82) = 43.47$ ,  $p < .001$ . Country remained a significant moderator of relations between Disengagement and N in a random-effects model. A stronger negative relationship between Disengagement and A was seen in North American samples ( $r = -.15$ ) than in Eastern ( $r = -.03$ ) or Western European samples ( $r = .00$ ),  $Q_B(2, k = 29) = 19.48$ ,  $p < .001$ . There were no Australian samples to include in this analysis, and it was not significant in an RE model.

Table 8

Beta Weights From Fixed-Effects Regression Tests of Moderation of Relations Between Personality and Coping by Age, Sex, Stress Level, and Coping Focus

Variable	Problem solving	Mixed social support	Emotion regulation	Distraction	Cognitive restructuring	Negative emotion focus	Denial
Extraversion							
Age	-.05	-.02	.10	-.06	-.21	-.37***	
Sex	-.05	<b>-.23**</b>	-.01	-.02	.11	-.04	
Stress severity	.26***	.25***	.25	<b>.29***</b>	.28*	-.15*	
Coping focus	-.16*	<b>-.27**</b>	.39*	.28*	-.33*	.27***	
R <sup>2</sup>	.06	.12	.39	.25	.14	.20	
N	77	64	23	30	37	40	
Q <sub>M</sub>	12.98**	<b>19.72***</b>	<b>21.47***</b>	16.76**	11.79*	39.01***	
Q <sub>R</sub>	199.05***	146.92***	33.66**	Q <sub>R</sub> = 50.01**	70.25***	153.97***	
Neuroticism							
Age	<b>.34***</b>	.04	-.10	.13	<b>.34***</b>	.18***	-.62
Sex	-.11**	.04	.09	.14	-.10	.11*	.21
Stress severity	-.27***	-.28***	.02	-.11	-.16*	.09*	.34
Coping focus	.25***	-.21**	.14	<b>-.33***</b>	.09	<b>-.57***</b>	.05
R <sup>2</sup>	.14	.15	.03	.13	.12	.38	.25
N	103	77	31	42	48	59	21
Q <sub>M</sub>	105.01***	27.46***	Q <sub>M</sub> = 2.49	11.08*	26.33***	<b>198.86***</b>	13.93**
Q <sub>R</sub>	643.04***	154.88***	86.49***	75.08***	201.56***	330.03***	41.40***
Agreeableness							
Age	<b>-.44**</b>	-.13			-.38		
Sex	-.08	.10			.32		
Stress severity	<b>.54***</b>	.29			-.02		
Coping focus	<b>-.41**</b>	-.19			-.15		
R <sup>2</sup>	.33	.06			.17		
N	41	40			20		
Q <sub>M</sub>	<b>22.77***</b>	3.87			7.53		
Q <sub>R</sub>	46.21	61.57**			35.77**		
Openness to experience							
Age	<b>-.50***</b>	-.08		<b>.51*</b>	<b>-.64**</b>	-.04	
Sex	.18	.18		<b>-.41*</b>	.36	-.16	
Stress severity	.08	.26		.20	<b>-.75***</b>	.07	
Coping focus	-.22	-.08		-.04	<b>.58*</b>	.14	
R <sup>2</sup>	.23	.08		.33	.49	.07	
N	42	40		21	22	23	
Q <sub>M</sub>	<b>19.19***</b>	3.79		<b>13.50**</b>	<b>16.34**</b>	5.49	
Q <sub>R</sub>	64.23**	40.43		27.73*	17.18	73.39***	
Conscientiousness							
Age	-.22**	-.45***			<b>-.74***</b>	<b>-.60***</b>	
Sex	-.08*	-.03			.24**	-.01	
Stress severity	.10	<b>.53***</b>			<b>.85***</b>	<b>.44**</b>	
Coping focus	<b>-.21**</b>	.00			-.17	-.04	
R <sup>2</sup>	.09	.33			.56	.41	
N	45	43			20	22	
Q <sub>M</sub>	<b>17.03**</b>	42.52***			<b>87.95***</b>	<b>18.48***</b>	
Q <sub>R</sub>	167.91***	87.27***			69.26***	26.33***	

Note. Predictors in bold text are also significant predictors in a random-effects model. Q<sub>M</sub> in bold text indicates the regression is significant in a random-effects model; Q<sub>M</sub> = Q<sub>model</sub>, indicating the significance of the regression model; Q<sub>R</sub> = Q<sub>residual</sub>, indicating whether significant variability in effect sizes remains to be explained.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 9

Effect Sizes by Stress Group for Measures of Coping for Personality and Coping Trait Pairs From Regression Tests of Moderation

Personality measure	Problem solving			Social support			Emotional regulation			Distraction			Cognitive restructuring			Negative emotion focus			Denial	
	Average	High	Dispo	Average	High	Dispo	Average	High	Dispo	Average	High	Dispo	Average	High	Dispo	Average	High	Dispo	Sit	Dispo
Extraversion	.19 (63)	.24 (14)	.21 (50)	.23 (55)	.25 (9)	.25 (44)	.00 (21)	.12 (2)	-.03 (14)	.07 (25)	.20 (5)	.22 (30)	.24 (7)	.25 (20)	.00 (9)	-.04 (34)	-.07 (6)	.00 (9)	.07 (5)	.06 (31)
Neuroticism	-.12 (81)	-.16 (22)	-.16 (66)	.04 (64)	-.04 (13)	.05 (51)	.00 (27)	.01 (4)	-.01 (18)	.17 (33)	.16 (9)	-.15 (36)	-.15 (12)	-.17 (25)	.25 (18)	.40 (47)	.41 (12)	.25 (18)	.07 (5)	.48 (41)
Agreeableness	.07 (29)	.11 (12)	.10 (27)	.10 (32)	.13 (8)	.11 (30)				.16 (15)	.12 (5)	.16 (15)	.17 (10)	.17 (10)						
Openness to Experience	.15 (33)	.13 (9)	.16 (27)	.05 (35)	.09 (5)	.06 (29)				.03 (18)	.13 (3)	.18 (18)	.11 (4)	.16 (10)	.07 (5)	.02 (19)	.06 (4)	.14 (12)	.07 (5)	.02 (18)
Conscientiousness	.32 (34)	.29 (11)	.33 (31)	.05 (36)	.15 (7)	.06 (34)						.13 (16)	.28 (4)	.16 (11)	-.04 (3)	-.17 (18)	-.06 (4)	.23 (9)	-.04 (3)	-.17 (19)
Extraversion	.19 (27)	.21 (50)	.21 (50)	.21 (20)	.25 (44)	.25 (44)	.10 (9)	-.03 (14)	.08 (27)	.15 (3)	.08 (27)	.21 (17)	.25 (20)	.25 (20)	.00 (9)	.00 (9)	-.06 (31)	.21 (17)	.07 (5)	.06 (31)
Neuroticism	-.09 (37)	-.16 (66)	-.16 (66)	-.02 (26)	.05 (51)	.05 (51)	.02 (13)	-.01 (18)	.18 (36)	.09 (6)	.18 (36)	-.13 (23)	-.17 (25)	-.17 (25)	.25 (18)	.25 (18)	.48 (41)	-.13 (23)	.07 (5)	.48 (41)
Agreeableness	.07 (14)	.10 (27)	.10 (27)	.11 (10)	.11 (30)	.11 (30)						.13 (10)	.17 (10)	.17 (10)				.13 (10)	.07 (5)	.20 (16)
Openness to Experience	.12 (15)	.16 (27)	.16 (27)	.07 (11)	.06 (29)	.06 (29)				.08 (3)	.04 (18)	.14 (12)	.16 (10)	.16 (10)	.07 (5)	.07 (5)	.02 (18)	.14 (12)	.07 (5)	.02 (18)
Conscientiousness	.28 (14)	.33 (31)	.33 (31)	.13 (9)	.06 (34)	.06 (34)						.23 (9)	.16 (11)	.16 (11)	-.04 (3)	-.04 (3)	-.17 (19)	.23 (9)	-.04 (3)	-.17 (19)

Note. Number in parentheses indicates the number of samples included in the estimate of mean effect size. Sit = situation-specific measure; dispo = dispositional measure.

## Discussion

Although individual studies have suggested a potent influence of personality on coping, aggregated results suggest only a small to moderate direct effect. Difficulty synthesizing data across multiple models and measures of coping may partially explain small effects, but results were near identical after correcting for measure reliability and limiting analyses to data based on well-established, easily categorized measures. It is important to note that the small magnitude of relations does not necessarily mean that the impact of personality on coping is trivial. Stress is pervasive, and individuals select and implement coping strategies daily, permitting even a small effect to have a large impact over time. Personality may also indirectly affect coping by influencing stress exposure, stress reactivity, or perceptions of coping resources. For example, in a sample of Croatian women, E influenced self-concept, with positive self-concept predicting problem-focused coping (Hudek-Knežević & Kardum, 1996). Expanding our understanding of relations between personality and coping will require improved assessment of personality and coping, more complex research designs and analyses, and greater attention to sample composition. Additional studies focusing on simple correlations between broad measures of personality and coping are unlikely to add to the existing knowledge base.

### Assessment of Coping and Personality

The bulk of the literature on relations between personality and coping is based on broad, dispositional measures of coping, which are prone to reporting biases and do not reflect the transactional nature of stress and coping. As predicted, use of broad coping measures obscured more complex relations between personality and coping. For example, although N was unrelated to broad engagement coping, it was negatively associated with problem solving, cognitive restructuring, and acceptance strategies and positively associated with emotional support and distraction. In the realm of emotion-focused coping, controlled emotion regulation strategies (e.g., relaxation) showed a very different pattern of relations to personality than did negative emotion-focused coping strategies (e.g., venting), supporting calls to distinguish more carefully between aspects of emotion-focused coping. Just as future research should focus on specific coping strategies rather than on broad categories, specific personality facets should also be assessed, as they may reveal relationships not seen at the trait level and explain the remaining heterogeneity in effect sizes. For example, the anxiety component of N may be more likely than the irritability component to provoke avoidance and withdrawal (Lengua et al., 1999). One of the few studies assessing relations between personality facets and coping (Bishop, Tong, Diong, Enkelmann, & Why, 2001) suggests that this is the case. This analysis of personality facets also indicated that the achievement striving and deliberation facets of C more strongly predicted problem solving than did competence and order facets, and the self-discipline and competence facets of C more clearly decreased avoidant strategies than did achievement striving. Warmth and positive emotion facets of E predicted positive thinking, but excitement seeking and activity were unrelated, highlighting the need to assess personality facets.

Problems inherent to retrospective self-report of coping may partly explain why the direct effects of personality on coping, and

the differences between effects for dispositional and situation-specific coping reports, were relatively small. Retrospective and dispositional reports of coping are influenced by memory errors, difficulty aggregating across events, poor insight, and reluctance to report ineffective strategies (R. E. Smith et al., 1999; Stone et al., 1995, 1998). Personality traits themselves may also impact coping recall and reporting. As memory and reporting biases influence both dispositional reports and retrospective reports of specific situations, they may obscure the degree to which personality better predicts trait coping than responses to single events.

Retrospective and dispositional coping reports are poor predictors of daily and immediate coping reports, which are less subject to memory and reporting biases (e.g., Schwartz, Neale, Marco, Shiffman, & Stone, 1999; R. E. Smith et al., 1999). Comparisons of retrospective reports to more immediate reports suggest an impact of reporting biases, with daily reports revealing a different, and likely more accurate, pattern of relations between personality and coping. N was unrelated to retrospectively reported engagement, but was positively associated with daily reports. C was positively related to retrospective reports of engagement, but negatively related to daily reports. Personality-related recall and reporting biases may partially explain these differences, with N predicting poor long-term recall of active, engagement strategies, or C inflating recollections of strategies congruent with the value placed on discipline and planning. Of course, differences between retrospective and daily reports may also reflect true differences in the timing and duration of coping strategies. For example, in dispositional reports, N predicts seeking emotional support and distraction and is negatively related to problem solving, cognitive restructuring, and acceptance. Daily reports may best capture engagement strategies chosen to alleviate distress, such as distraction and support seeking, but poorly reflect those taking more time and planning to implement, such as problem solving.

### *Study Design*

Because personality influences stress exposure, reactivity, and appraisals, it is impossible to disentangle the effects of personality on coping from the effects of stress on coping with cross-sectional studies of dispositional coping. As expected, relations between personality and coping were stronger in samples facing serious stressors, which endure over time and impact multiple domains of functioning. Everyday stressors (e.g., preparing for a test) tend to be strongly scripted and have clear coping norms, providing fewer opportunities for personality to influence coping (Suls & David, 1996). As expected, personality better predicted disengagement for self- than for researcher-selected stressors. However, unexpectedly, E and C were more strongly related to engagement coping for researcher-selected stressors than for self-selected stressors. Many researcher-selected specific stressors were chronic (e.g., daily reports of coping with arthritis), requiring optimism and diligence to persist in coping, and thus may have better revealed the impact of E and C than could more acute self-selected stressors.

Personality may also influence the range, order, and persistence of coping strategy use (Vollrath, 2001). N has been linked to less consistency in coping across situations (Atkinson & Violato, 1994), and comparison of retrospective and daily effects from this study suggests that N may be associated with failure to persist in engagement strategies rather than with complete failure to engage.

Daily report and longitudinal designs will be essential to understanding the short- and long-term influences of personality on coping strategy selection and efficacy. Because coping is tailored to match the demands of specific situations, and because the nature and context of stress influences relations between personality and coping (e.g., Lee-Baggley, Preece, & DeLongis, 2005), future studies should focus on responses to specific stressors, with attention to the potential impact of the domain, severity, and controllability of the stressor. The impact of personality on coping can be best distinguished from the impact of stress on coping through the use of standardized laboratory stressors. Presenting the same objective stressor to all participants minimizes confounds, allows for immediate self-reports of coping, provides information about how personality influences perceptions of stress, and facilitates observational measures of coping.

Although some coping strategies (e.g., cognitive restructuring) may be difficult to observe, moving beyond reliance on self-report to include observational and multiple-informant data when possible will reduce problems with common method variance and reporting biases, provide different perspectives on coping and personality, and facilitate assessment of the quality of coping strategy implementation (Butt, Strauss, Smyth, & Rose-Rego, 2002; Capaldi & Rothbart, 1992; Compas et al., 2001). Personality may influence not only the coping response selected, but also the ability to implement the response. C may lead to better problem solving, E to more skilled attempts to obtain social support, and N to distress-related impairments in the ability to use complex cognitive strategies (Vollrath, 2001). Whereas someone high in E and low in N may benefit from seeking support and problem solving, a low E, high N individual attempting those strategies may alienate others by being overly negative and fail at problem solving because his or her distress interferes with planning, evaluating, and implementing solutions.

### *Sample Characteristics*

Demographic analyses suggest that age, sex, and culture influence relations between personality and coping. Personality better predicted coping in younger samples, perhaps because responses to stress are driven more strongly by temperament in younger individuals, who have had fewer opportunities to develop a range of strategies and become adept at matching them to situations. Age-related personality changes, including decreases in N, E, and O and increases in A and C (McCrae et al., 2000), may also have an impact. As N decreases, individuals may be less distressed and less motivated to cope, and as C increases, they may be more likely to problem solve, leading to less coping variability and attenuated correlations in older samples.

Although sex was not a consistent moderator, E more strongly predicted support seeking in women than in men, in keeping with the tendency of women to score more highly on the warmth and gregariousness facets of E (Costa et al., 2001). Women showed a stronger relationship between O and distraction, which involves moving away from a distressing feeling and toward a positive thought or activity. Because women are less open to fantasy and ideas and more open to feelings (Costa et al., 2001), they may be prone to explore distressing emotions, and men may be prone to shift their attention. This may explain why men do more distraction coping (Connor-Smith et al., 2000; Tamres et al., 2002), but

also attenuate relations between O and distraction. The link between N and limited use of problem solving was weaker in men. It is possible that the societal expectation that men solve problems rather than ruminate may provide some protection for men high in N. However, the positive relationship between N and negative emotion-focused coping was stronger for men. Because negative emotion-focused coping involves rumination and venting, behaviors which are less accepted for men, these behaviors may emerge primarily in the context of high N, as men with low N are able to suppress them.

Although relations between personality and coping differed across countries, results were difficult to interpret and limited by the absence of samples from non-Western cultures. In a recent study of Korean Americans, acculturation level interacted with personality to predict coping (Roesch, Wee, & Vaughn, 2006), suggesting that attention to cultural factors is important. It is also possible that measurement artifacts (e.g., different representation of specific personality facets on measures or different meanings applied to personality descriptors) partially explain cross-cultural finding. In American samples, greater ethnic diversity was typically associated with a stronger protective effect of personality. Ethnicity may be a marker for some other factor, such as the nature of stressors experienced (e.g., minority groups experience more uncontrollable stressors, such as racism or poverty) or levels of individualism and collectivism, which may influence responses to stress and the availability of coping resources. For example, a culture that values family connections and interdependence may provide social resources that are not available in a more individualistic culture, helping an individual high in N to avoid withdrawal and disengagement.

### Data Analysis

Because the majority of studies have explored only simple correlations between single personality traits and coping strategies, this meta-analysis was unable to investigate ways in which correlations between personality traits and interactions of personality traits may obscure true relationships between personality and coping. Big Five traits are often thought of as orthogonal, but they are intercorrelated in practice. Although this is to some extent measure specific and linked to individual response biases (Biesanz & West, 2004; Saucier, 2002), two higher order personality factors have been identified that are similar across cultures and measures (Blackburn, Renwick, Donnelly, & Logan, 2004; Digman, 1997; DeYoung, 2006; Jang, Livesley, & Ando, 2006). DeYoung (2006) has termed these metatraits *Stability* (low N, high A, high C), alternately described as self-control, socialization, goodness, and morality, and *Plasticity* (high E and O), labeled dynamism, personal growth, and engagement (Digman, 1997; Olson, 2005).

Modeling relations between personality and coping using these constructs may result in a more parsimonious model. The direction and magnitude of effects for E and O were similar in many cases, and Plasticity may explain the positive relationship of E and O with strategies such as problem solving and cognitive restructuring. Similarly, the protective impact of Stability may best explain relations of A, low N, and C to cognitive restructuring and acceptance. At the same time, fine-grained personality distinctions also remain relevant. E and O showed clearly different relationships to seeking support, religious coping, and withdrawal, and A, low N,

and C showed clearly different relationships to problem solving, seeking support, disengagement, and negative-emotion focus. It may be that Plasticity primarily influences the energy and creativity available for coping, and Stability the motivation and intent to successfully resolve or adapt to the situation. Individual personality facets may then determine the specific behavioral implementation of coping goals (e.g., seeking support, planning, or praying).

The intercorrelation of personality traits is also problematic because it may obscure relationships between personality and coping. Although Stability and Plasticity are uncorrelated in latent-variable models based on multi-informant ratings, the impact of rater biases leads to intercorrelation in single-informant reports (Biesanz & West, 2004; DeYoung, 2006). For cases in which personality traits are expected to have an opposite relationship to a coping strategy, the intercorrelation means that the failure to include all personality traits in the analysis is likely to artificially dampen the apparent relationship between personality and coping (DeYoung, 2006). For example, Stability should show strong negative associations with wishful thinking and negative emotion-focused coping, but Plasticity may show weak positive associations due to greater openness to fantasy and greater comfort acknowledging and openly expressing emotions. Because of this suppressor effect of Plasticity, controlling for Plasticity in analyses may reveal a stronger negative relationship between Stability and these coping strategies than would be seen in a simple correlational analysis. Similar problems are likely in analyses exploring relations between Big Five traits and coping. Studies predicting coping from several personality traits simultaneously have revealed surprising relationships, such as a negative relationship between A and problem solving and positive correlations between E and avoidance and C and distancing coping (Bouchard et al., 2004; Newth & DeLongis, 2004). Assessing only simple correlations between single personality traits and coping strategies is likely to substantially underestimate or inaccurately represent the impact of personality.

It is also likely that personality traits interact to predict coping. For example, distraction may occur primarily when an individual has both the need to regulate unpleasant arousal (high N) and the ability to shift attention toward something positive (high attentional control or positive affectivity). Disengagement coping has been linked to interactions of N and E (Parkes, 1986), and the influence of E on coping is greater for high N than low N individuals (Gomez, Holmberg, Bounds, Fullarton, & Gomez, 1999). In an analysis using eight groups defined by high and low E, N, and C scores, E was largely irrelevant except to seeking support, but N and C showed an additive effect (Vollrath & Torgersen, 2000). Those with low N and high C showed the greatest use of adaptive coping, and those with high N and low C showed the greatest use of dysfunctional coping, emphasizing the need to attend to multiple traits.

Similarly, coping should also be considered in a broader context. Studies included in this analysis used total coping scores, which illustrate how much of a coping strategy the individual uses, but not the type of coping upon which he or she most relies. Proportional coping measures (e.g., the ratio of problem solving to all other coping strategies) control for response biases and the tendency of stress to increase all types of coping. Because total and proportional coping measures produce different results in predictions of sex differences and

psychopathology (Connor-Smith et al., 2000; Tamres et al., 2002), use of proportional coping measures may further illuminate relations between personality and coping.

### Limitations

Effect sizes described only as nonsignificant were omitted rather than imputed as zero, and the sample was limited to published studies, which may be more likely than unpublished studies to report large effects in expected directions. This leaves open the possibility that relations between personality and coping are even weaker than results suggest. However, only six samples had any missing effect sizes, and the large number of effects per study ( $M = 15.7$ ) suggests that authors did not routinely present significant correlations only. Because a large number of analyses were conducted, some significant results may represent only chance findings. Findings are more likely to be significant by chance for FE analyses, which produce slightly larger effect sizes and narrower confidence intervals than do RE analyses. Monte Carlo simulations of FE and RE models indicate that if a moderator is identified as significant in an RE model, it is very likely to be a true moderator. However, if a moderator is identified as nonsignificant in an RE model, we should be far less confident that this indicates the absence of moderation (Overton, 1998). Inferences based on FE results should be limited to the universe of self-report questionnaire studies that examine relations between personality and coping in samples like those in this meta-analysis, whereas RE results can be generalized to a broader universe of samples and assessment methods.

### Conclusion

Although many studies present correlations between personality and coping, our knowledge of the role of personality in facilitating or constraining coping and the role of coping in regulating personality-based reactivity is limited. A richer understanding will require more careful assessment of coping strategies; complex study designs using standardized stressors, daily or immediate coping reports, and longitudinal assessment; attention to the nature and severity of stressors; consideration of the potential influence of demographic factors; and analyses exploring the interplay of multiple personality traits. Future research should focus on facets of N, E, and C, as these are the traits most clearly linked to coping.

Results of this meta-analysis have implications for understanding the joint role of personality and coping in determining vulnerability to distress. Coping-mediated models assume that the link between personality and distress can be explained by the selection of ineffective coping strategies; by comparison, coping moderated models suggest that personality and coping interact, with coping effectiveness dependent on personality traits (Bolger, 1990). Because direct effects of personality on coping are typically small, coping is unlikely to fully mediate relations between personality and distress. However, tests of coping moderation have indicated that strategies that are effective for some individuals are useless, or even harmful, to others (Gomez, Bounds, et al., 1999; Hudek-Knežević, Kardum, & Maglica, 2005; Lengua & Sandler, 1996; Newth & DeLongis, 2004). In particular, daily report and laboratory studies suggest that individuals high in sensitivity to threat may either benefit from disengagement or be harmed by engage-

ment in the short term, with the opposite pattern appearing for individuals low in threat sensitivity (Bolger & Zuckerman, 1995; Connor-Smith & Compas, 2004; Gunther et al., 1999). Further investigation of the ways personality and coping interact to predict distress is important to understanding the development of coping. Personality may influence coping both by shaping the strategies that are easiest for an individual child to implement and by influencing the success of those strategies. Although N may facilitate disengagement, and make it beneficial in the short term, these immediate benefits for vulnerable individuals are likely outweighed by the long-term costs. Greater insight into the interplay of personality and coping will aid in the design of more effective intervention and prevention programs by making it possible to tailor programs to fit the unique needs of individuals.

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