HOPE, OPTIMISM, PESSIMISM, AND SPIRITUALITY AS PREDICTORS OF WELL-BEING CONTROLLING FOR PERSONALITY

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ABSTRACT

Social cognitive theory and, more recently, the positive psychology movement, have emphasized the function of hope and optimism as cognitive expectancy variables in predicting happiness, or subjective well-being (SWB), in addition to their traditional association with reduced emotional distress. Research in spirituality has demonstrated similar relationships with SWB. No study to date, however, has examined the relative contribution of each of these variables to SWB, and controlled for the possible mediating effects of personality. The sample consisted of 255 adults (54% female), with a mean age of 43. Participants completed measures of the five factors of personality, state hope, dispositional optimism, and spirituality, along with cognitive and affective dimensions of subjective well-being. Hope predicted all three dimensions of subjective well-being over and above personality, bipolar optimism, and spirituality. Pessimism predicted negative affect while both optimism and spirituality predicted positive affect when controlling for age, gender, personality, and the other study variables. Each variable warrants continued attention as qualities that augment personal well-being.

Overall, most people in Western, democratic societies have vastly improved physical and material well-being in comparison to previous generations, but absolute mean happiness has not increased (Esterbrook, 2003; Myers, 2000b). This "progress paradox," no doubt, has many sources. Answers range from the biological (adaptation set point theory) to the moral (increasing "selfism") with many variations in between (Kahneman, Diener, & Schwarz, 1999; Myers, 2000a; Schwartz, 2004). Psychology's recent emphasis on positive psychology offers a number of avenues for investigating this phenomenon,

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particularly how individual differences may influence happiness or subjective well-being (SWB) over and above environmental events.

This article investigates three variables positive psychology has linked to SWB under the character-strength label “transcendence” (Peterson & Seligman, 2004), namely, optimism, hope, and spirituality (Lopez & Snyder, 2003; Snyder & Lopez, 2002). Each of the variables under study is similarly related to happiness in that each promotes well-being and is related to adaptive coping mechanisms. Such commonality raises the question as to whether, as a group, they represent separate dimensions and whether they affect outcomes differentially. Conceptual stances for understanding each variable within the broader context of personality and social psychological processes currently are under development.

**OPTIMISM**

Two major strains of optimism research exist, one viewing it as a tendency to make certain types of positive attributions in response to events, and the second as a dispositional expectancy prior to events. Both fit into social cognitive theory with its emphasis on expectations.

The current study examines the latter form of optimism which Carver and Scheier (1998) framed around expectancy value theory. In this model, people organize their behavior around personal goals—pursuits to strive toward, or anti-goals—objects and events to avoid. The value of a particular goal determines an individual's motivational level in pursuing or avoiding it. In addition to providing goals (the value end of the model), a person's expectation that he or she can accomplish the goal predicts the probability of engaging in that behavior. Optimists are people who expect good things to happen; pessimists expect bad things to happen. The level of confidence people have in the likelihood that positive or negative events will occur predicts behavior toward and away from these events respectively. The developers of this model view optimism as a bipolar disposition, with pessimism its opposite end.

Researchers have raised at least two questions about this trait. First, do neuroticism and extraversion better account for optimism and pessimism (Smith, Pope, Rhodewalt, & Poulton, 1989)? The weight of evidence at this time indicates that they are significantly related but do not eliminate the effects of optimism and pessimism (Scheier, Carver, & Bridges, 1994). Second, is optimism bipolar as
the original theory proposed, or do optimism and pessimism represent independent dimensions? Research on the original optimism scale (Life Orientation Test, Scheier & Carver, 1985) found evidence of dimensionality (Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992; Mroczek, Spiro, Aldwin, Ozer, & Bosse, 1993). More recently, its revision (Life Orientation Test—Revised, Scheier et al., 1994) is described as evidencing less dimensionality, and the differences in predicting by each dimension are thought "not to be very large" (Carver, Lehmen, & Antoni, 2003, p. 813, n. 1). Optimism is consistently linked with psychological well-being, ways of coping with stress, effective health strategies, and people's descriptions of their own behavior in response to stress (Peterson & Bossio, 2002).

HOPE

A second expectancy variable, hope, has also generated considerable empirical research with outcomes similar to optimism. C. R. Snyder's hope theory has stimulated the bulk of this work (Snyder, 2002).

Hope theory also begins with viewing goals as the central organizing component of human behavior (Snyder, 2002). Hope in this model is primarily a cognitive construct that consists of two parts. If goals direct people's behavior, to reach them successfully people must have the capacity to generate pathways. Generating pathways is not sufficient to attaining goals, however. People also need to have confidence in "the perceived capacity to use one's pathways to reach desired goals" (Snyder, 2002, p. 251). This "agency thought" is the motivational component of hope theory. Similar to optimism, hope is construed as a dispositional construct with scales measuring both trait and state hope.

Two criticisms of hope theory relate more to its conceptualization rather than any empirical results. The first concern revolves around whether hope, as operationalized, is better understood as a personal control construct such as self-efficacy (Aspinwall & Leaf, 2002). The second concern is that the actual items on the hope scale, for example, "I've been pretty successful in life," measure expectations for success rather than hope (Carver & Sheier, 2002). Research has found hope consistently linked with academic and athletic performance, ways of coping with stress, effective health strategies, and psychological well-being (Snyder, 2002).

The developers of the dispositional hope scale have constructed,
in addition, a State Hope Scale (Snyder et al., 1996) to provide "a snapshot of a person's current goal-directed thinking" (p. 321). Similar to dispositional hope, state hope has the related but not synonymous agentic and pathways divisions. The present study chose the State Hope Scale because the developers maintained that it would better measure a person's current temporal situation, and this could provide a contrast to the dispositional nature of the other predictor variables. Secondarily, there is considerably less research on state hope in comparison to the amount for trait hope.

**Spirituality**

Spirituality and religiosity appear related yet qualitatively different from hope and optimism. Religion certainly provides people with hope and optimism in times of stress, but a single social cognitive construct such as expectancy-value does not capture its whole range. If one examines any typical phenomenological analysis of religion (e.g., Cannon, 1996), at least six major dimensions emerge. They include cognitive belief systems, ritual behaviors, moral behavioral codes, intentionally sought-after affective states, attempts to harness transcendent powers, and a desire to have one's consciousness altered in harmony with a perceived world-view.

Molar psychological theories of religious experience (e.g., Freydian) have failed to provide confirming data (e.g., Piedmont, Ciarrocchi, & Williams, 2002). Like the proverbial blind men and the elephant, psychological theories tend to capture one dimension of religion and spirituality well, but miss other important features. Some theories may also have failed due to a one-sided emphasis on the negative effects of religiosity. Studies have found some circumscribed dimensions of negative religious coping, but positive findings far outweigh negative ones (Pargament, 1997). Social cognitive theory, as a reciprocal interaction model that encompasses internal personal, environmental, and behavioral variables, may provide a more adequate theory of religious experience.

Models within social cognitive theory that emphasize goals or personal striving have heuristic merit for predicting at least some effects of religious experience. If we define spirituality as the degree to which a person desires intimacy with God or a transcendent ultimate reality, then this pursuit falls clearly within the theoretical family
of psychological models that studies personal goals (values) and expectancies. Goal striving as an aspect of religious faith is central to many spiritual projects. In one of the earliest Christian writings the spiritual journey is framed in that language.

It is not that I have already taken hold of it or have already attained perfect maturity, but I continue my pursuit in hope that I may possess it... Just one thing: forgetting what lies behind but straining forward to what lies ahead, I continue my pursuit toward the goal, the prize of God's upward calling... (Philippians 3:12-14, New American Bible, 1988, p. 384).

Emmons (1999) has developed a model of spirituality as a form of personal striving toward goals of ultimate concern and, in accord with the theory, found that spiritual striving predicts SWB (Emmons, Cheung, & Tehrani, 1998).

Spirituality as a psychological construct, therefore, has potential to clarify some aspects of expectancy-value theory. Carver and Scheier (2002) noted that optimism theory takes a broad view about people's confidence in good things happening to them. Hope theory, in contrast, maintains that the specific source of confidence is personal agency. In the former view, spirituality would function as a way of generating personal confidence that could be independent of personal agency. Many spiritual systems, for example, emphasize "letting go" or surrendering one's ego (control) as the essential component in accomplishing both spiritual and temporal goals. In keeping with this view, spiritual outlooks and ways of coping are linked to psychological well-being, positive coping strategies, and physical health in distinction to passive ways of coping (Pargament, 2002).

Spirituality and religion consists of multiple components and an all-encompassing social scientific model remains to be found. Expectancy value theory potentially captures several dimensions of religion and spirituality. Optimism (Carver & Scheier, 2002), with its notion of confidence about positive events happening in the future, captures what many religions referred to as the eschatological dimension. Eschatology might be thought of as theological teleology. How does a believer think things will turn out and what will that final state look like? Not only can goals play a central role in such belief systems, people's confidence inspired by religious or spiritual motivations are assumed partially to drive behavior in the direction of these goals.

Similarly, hope is one process by which believers can maintain
this sense of confidence. Snyder's hope theory emphasizes personal control and almost all religions and spiritual systems expect people to act on their own behalf to achieve salvation, redemption, or wisdom. In some ways optimism is a better fit for religious traditions that emphasize the effect of God providing the means to achieve the spiritual ends for cooperative believers. Optimism does not locate confidence exclusively in personal agency, and so is more compatible with traditions that emphasize grace or surrendering of the ego.

Examining the interrelationships between spirituality, hope, and optimism as predictors of meaningful psychosocial outcomes thus becomes one way to understand how adequately current psychological models capture the multidimensional constructs of religion and spirituality.

The present study, therefore, explores the relationship between each of these variables with SWB and compares the relative strength of these relationships with one another. To assist this exploration, the present study employs an incremental validity model for understanding the relative effects of these variables in terms of their simultaneous contribution to predicted outcomes. Personality researchers have long proposed the utility of incremental validity models and the field is once again touting its value (Hunsley & Meyer, 2003). At least two aspects of the present study require an incremental validity approach. First, in addition to potential demographic confounds, central to this study's methodology is the need to control for personality effects when predicting well-being. Neuroticism and extraversion attenuate some effects of optimism and hope (Steed, 2002) and are highly related to SWB (Watson, 2000). As Watson (2000) pointed out, there are few studies that look at broader ranges of personality (e.g., the five-factor model) in conjunction with SWB, and some researchers doubt that factors other than neuroticism and extraversion matter (Steel & Ones, 2002; for evidence in the opposite direction, see DeNeve & Cooper, 1998). Any credible study of SWB, therefore, needs to take personality into account, whether narrowly or broadly construed. A recent study found that hope predicts cognitive well-being over and above the five-factor model (Park, Peterson, & Seligman, 2004). Spirituality and optimism, however, were not included, so their relative strength as predictor variables remains unknown.

An incremental validity model has particular value when extended to research in the field of religion and spirituality. Criticism in this
domain of research repeatedly emphasizes the interpretive difficulties in ruling out plausible alternative explanations. VanWicklin (1990) cautioned against the "religification" of well-understood personality and psychological variables, while others pointed out the absence of adequate controls (Sloan, Bagiella, & Powell, 2001). These concerns, as well as the relative newness of spirituality and religiousness as psychological constructs, require eliminating potential confounds. Indeed, the preponderance of published empirical research that links spirituality or religiousness to positive psychosocial outcomes fails to control for any aspect of personality. Frequently, this research controls for social and demographic confounds, but a meta-analysis of 142 SWB studies found that such variables account for considerably less variance than does personality (DeNeve & Cooper, 1998). Interestingly, in the same review, religion and personality accounted for a similar amount of variance in predicting SWB. More recent studies that controlled for personality have found that spiritual and religious variables predicted salient outcomes such as prosocial behavior (Ciarrocchi, Piedmont, & Williams, 2003), purpose in life (Piedmont, 2001), and SWB (Ciarrocchi & Deneke, 2004; Francis & Katz, 2002; Golden, Piedmont, Ciarrocchi, & Rodgerson, 2004).

**Hypotheses**

The primary hypotheses predicted that spirituality, hope, and optimism components would separately contribute significant independent variance to subjective well-being facets when controlling for age, gender, and personality. The exploratory hypotheses consisted of two sets. First, each predictor variable was individually tested to determine whether it fully mediated SWB for the remaining predictor variables. Second, to test whether spirituality predicts positive expectations (Carver & Scheier, 2002), separate regressions were conducted using hope and optimism as criterion variables while again controlling for age, gender, and personality.
METHOD

Well-Being Measures

The consensus in empirical research is to measure SWB's three related but independent dimensions separately (Kahneman, Diener, & Schwartz, 1999). These include positive affect, negative affect, and cognitive well-being. Two 6-item scales, derived from established affect scales and utilized in a national representative study (USA) measured positive and negative affect respectively (Mroczek & Kolarz, 1998). Alpha reliability in the current study was .73 for negative affect and .86 for positive affect.

The Satisfaction-With-Life Scale is widely used in SWB research as a measure of cognitive well-being (Deiner, Emmons, & Larsen, 1985). It consists of five items in a 7-point Likert format ranging from strongly disagree to strongly agree. A sample item is, "I am satisfied with my life." Alpha reliability for the current sample was .81.

Personality Measures

We measured personality according to the five-factor model, a standard taxonomy that describes an array of personality dispositions (McCrae & Costa, 1999): neuroticism (tendency to experience negative emotion), extraversion (tendency toward sociability and positive experience of emotions), openness to experience (degree to which one is open to different types of experience), agreeableness (tendency to be cooperative and oriented toward others), and conscientiousness (degree to which one sets goals and adheres to responsible behavioral patterns). In this study the Bipolar Adjective Scale measured the five factors. This is an 80-item scale that measures responses on a 7-point Likert-type scale (McCrae & Costa, 1985, 1987). Scores for each dimension are obtained by summing responses for each domain of the five factors. Sample items include, "prefer variety—prefer routine," and "serious—cheerful."

Predictor Variable Measures

Optimism was measured by the Life Orientation Test—Revised (LOT-R), a 10-item scale that reduces to six relevant questions after eliminating four filler items (Scheier, Carver, & Bridges, 1994). Three of the items tap positive expectations, for example, "I am always
optimistic about the future," and three tap negative expectations, for example, "If something can go wrong for me, it will." Responses range across a 5-point Likert scale from strongly disagree to strongly agree. The measure has wide use in empirical research and has strong psychometric properties (Carver & Scheier, 2003). In the present study the total scale is referred to as bipolar optimism and each 3-item component scale constitutes optimism or pessimism. Alpha reliability in this study was .79 for bipolar optimism, .77 for optimism, and .76 for pessimism.

Hope was measured by the State Hope Scale (Snyder et al., 1996), a 6-item questionnaire that measures beliefs about how successful the person is in pursuing current goals (agency) and how confident in finding ways to attain current goals (pathways). Three items measure agency (e.g., "At the present time, I am energetically pursuing my goals") and three measure pathways (e.g., "I can think of many ways to reach my current goals"). People respond to items on an 8-point Likert scale with answers ranging from definitely false to definitely true. The original validation study (Snyder et al., 1996) reported good internal reliability, no gender differences, and discriminate validity beyond dispositional hope, positive affect, negative affect, and self-esteem. For the present study, internal reliability was .83 for the total State Hope Scale, .82 for agency, and .72 for pathways.

Daily spiritual experiences were measured through six items on which people reported the degree of their relationship with God and sense of being spiritual (e.g., "I feel God's presence"). The items are arranged in Likert-fashion with six possible responses ranging from many times a day to never or almost never. The items were taken from a 16-item version of the Daily Spiritual Experiences Scale (Underwood & Teresi, 2002), and this short form was used in the 1998 General Social Survey (USA; N = 1445), a national representative study of religious and spiritual attitudes (Idler et al., 2003). Alpha reliability in the current study for the short-form Daily Spiritual Experiences Scale was .91.

Participants

Acquaintances of students in a graduate class in the psychology of religion completed the questionnaires anonymously and mailed them directly to the instructor. The total number of validly completed questionnaires was 255 (54% female) with mean and median ages
of 43 (range = 18-84). Ethnic make-up was 65% Caucasian, 14% African-American, 13% Asian/Pacific Islander, 2% Hispanic, 2% Native American, 1% Indian, and 4% Other. Religious affiliations were 49% Protestant, 40% Catholic, 1% Jewish, 2% Other, 4% Other/Not Specified, and 5% Atheist/Agnostic.

RESULTS

Descriptive Statistics

Table 1 presents the means, standard deviations, and intercorrelations for the study variables. The five-factor T-scores are all between 45 and 55. The test developers (McCrae & Costa, 1985, 1987) consider T-scores below 45 and above 55 distinctive, suggesting that scores in this study resemble previous research with the general population. Independent t tests analyzed gender differences. Men scored significantly higher on state hope and its pathways subscale (t = 2.99 and 3.611, respectively; p < .01), agreeableness (t = 2.92; p < .01), and conscientiousness (t = 3.15; p < .01), while women were higher in openness (t = 2.25; p < .05). No gender differences emerged for any SWB component, optimism, or spirituality.

Over 97% of the study variables' intercorrelations were significant, thereby highlighting the need to control for common variance. Except for the within-scale correlations, sizes ranged from small to moderate indicating that, even though there is considerable overlap, the variables are not redundant with each other.

Overall Data Analysis

To determine whether the predictor variables contributed unique variance to the SWB criterion variables over age, gender, and personality, a series of multiple regression analyses tested primary and exploratory sets of hypotheses. The primary set explored whether each of the predictor variables, spirituality, optimism, and hope, would predict additional unique variance for the SWB components over and above age, gender, and personality. The exploratory set first examined the potential mediating effect of each predictor variable in relationship to the other predictors. In other words, if a predictor variable (e.g., hope) added unique variance for a criterion (e.g., positive affect), would it continue to do so after controlling for spirituality and/or optimism?
## Table 1. Correlations Between Study Variables

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*Note.* Conscien. = Conscientiousness; Neg. Affect = Negative Affect; Pos. Affect = Positive Affect; SWL = Satisfaction with Life; Bipolar Opt. = Bipolar Optimism; Path. Hope = Pathways Hope. Correlation = > .09 significant at .05.
To test the primary set of hypotheses, a series of hierarchical regressions were performed with each facet of SWB constituting the criterion in separate models. For each model, age and gender were entered on step 1, personality on step 2, and either optimism, hope, or spirituality on step 3. In the case of optimism and hope, separate analyses were conducted for the total scales as well as their two subscales.

To test the exploratory set of hypotheses, each model entered the remaining predictor variables and their subscales systematically so that all combinations of mediation were accounted for. For each hierarchical regression, partial $F$ tests were calculated at each step to determine whether a particular set of variables significantly increased the explained portion of the variance. The advantage of multiple regression is that at one and the same time it: (a) controls for the variance of the other correlated variables to determine whether the main variable remains significant, similar to partial correlation; and (b) measures any additional (incremental) variance over and above any mediation effect. Thus, multiple regression both controls for overlap and can determine how much uniqueness any variable of interest might provide.

Age and gender added as a block were significantly related to negative affect only, yet inspection of the beta weights found that age alone accounted for the effect (-.25, $p < .001$). Consistent with the aging and emotional well-being literature (Mroczek & Kolarz, 1998) increasing age is associated with decreased negative affect.

Table 2 indicates, as expected, that the five factors of personality explained a significant portion of the variance for negative emotion (22%), positive emotion (32%), and cognitive well-being (13%) after controlling for age and gender. The individual personality factors that were related to the SWB components included neuroticism, extraversion and conscientiousness. Neuroticism was significantly related to all three SWB components, extraversion was related to positive and negative affect, and conscientiousness to positive affect and cognitive well-being. Openness and agreeableness were unrelated to any of the SWB components.

**Optimism**

Table 2 presents the findings for bipolar optimism and its optimism/pessimism subscales. Bipolar optimism added significant vari-
Table 2. Associations Between Optimism, Pessimism and Criterion Variables
With and Without Controlling for Predictor Variables (N = 256)

| Predictors | Negative Affect | | | | Positive Affect | | | | SWL | | |
|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|            | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change | $R^2$ | $\Delta R^2$ | $F$ Change |
| Age/Gender | .05 | .05 | 13.71*** | | .02 | .02 | 2.28 | .01 | .01 | 1.82 | | | | | | | | | | | | | | | |
| Personality | .28 | .22 | 15.17*** | | .34 | .32 | 24.11*** | .14 | .13 | 7.45*** | | | | | | | | | | | | | | | | |
| Bipolar Optimism$^b$ | .19 | .13 | 39.87*** | | .14 | .13 | 37.66*** | .13 | .12 | 34.69*** | | | | | | | | | | | | | | | |
| Optimism$^b$ | .14 | .08 | 22.67*** | | .20 | .18 | 58.83*** | .14 | .13 | 38.84*** | | | | | | | | | | | | | | | |
| Pessimism$^b$ | .16 | .11 | 32.13*** | | .05 | .04 | 11.13*** | .07 | .06 | 15.74*** | | | | | | | | | | | | | | | |
| Bipolar Optimism$^d$ | .32 | .03 | 10.03*** | | .34 | .01 | 4.04*** | .18 | .05 | 14.07*** | | | | | | | | | | | | | | | |
| Optimism$^c$ | .29 | .00 | .64 | | .38 | .04 | 14.58*** | .19 | .05 | 15.01*** | | | | | | | | | | | | | | | |
| Pessimism$^g$ | .31 | .03 | 10.67*** | | .34 | .00 | 1.03 | .17 | .03 | 8.18*** | | | | | | | | | | | | | | | |
| Bipolar Optimism$^e$ | .34 | .01 | 4.92* | | .41 | .00 | .43 | .31 | .01 | 4.05* | | | | | | | | | | | | | | | |
| Optimism$^f$ | .32 | .00 | .05 | | .43 | .01 | 6.09* | .32 | .01 | 4.48* | | | | | | | | | | | | | | | |
| Pessimism$^f$ | .34 | .02 | 6.33** | | .41 | .00 | .06 | .31 | .01 | 1.71 | | | | | | | | | | | | | | | |
| Bipolar Optimism$^f$ | .32 | .03 | 10.21*** | | .38 | .01 | 3.93* | .19 | .05 | 13.77*** | | | | | | | | | | | | | | | |
| Optimism$^g$ | .29 | .00 | 1.07 | | .40 | .03 | 11.17*** | .20 | .04 | 13.43*** | | | | | | | | | | | | | | | |
| Pessimism$^g$ | .32 | .03 | 10.04** | | .38 | .00 | 1.78 | .18 | .03 | 8.88*** | | | | | | | | | | | | | | | |

Note. Age and gender entered as a block.
$^a$ controlling for age/gender.
$^b$ controlling for age/gender and personality.
$^c$ controlling for age/gender, personality and hope.
$^d$ controlling for age/gender, personality, and spirituality.
SWL = Satisfaction with life
*p < .05; **p < .01; ***p < .001.

ance for each component of SWB controlling for age/gender and personality. When total hope was added to step 3 after age/gender and personality, bipolar optimism continued to add significant additional variance for negative affect and cognitive well-being. Finally, when spirituality was entered as step 3, the same pattern emerged for age/gender and personality as with hope. That is, bipolar optimism predicted all three components.

Optimism alone predicted all three components of SWB controlling for age and gender, but negative affect dropped out when personality was entered in step 2. The same pattern remained when either hope or spirituality was entered in step 3, suggesting that personality attenuated the relationship between optimism and negative affect, but hope or spirituality did not.

Pessimism alone predicted all three components of SWB controlling for age and gender, but positive affect dropped out when personality was entered in step 2. The pattern changed when hope was entered in step 3, with pessimism continuing to contribute additional significant variance only to negative affect. Spirituality, however,
Table 3. Associations Between State Hope and Criterion Variables With and Without Controlling for Predictor Variables (N = 256)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Negative Affect</th>
<th>Positive Affect</th>
<th>SWL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>$\Delta R^2$</td>
<td>$F$ Change</td>
</tr>
<tr>
<td>Age/Gender</td>
<td>.05</td>
<td>.05</td>
<td>13.71***</td>
</tr>
<tr>
<td>Personality</td>
<td>.24</td>
<td>.24</td>
<td>28.49***</td>
</tr>
<tr>
<td>Total Hope$^a$</td>
<td>.17</td>
<td>.10</td>
<td>32.04***</td>
</tr>
<tr>
<td>Agency$^a$</td>
<td>.17</td>
<td>.10</td>
<td>32.49***</td>
</tr>
<tr>
<td>Pathways$^a$</td>
<td>.12</td>
<td>.06</td>
<td>17.19***</td>
</tr>
<tr>
<td>Total Hope$^b$</td>
<td>.32</td>
<td>.04</td>
<td>14.21***</td>
</tr>
<tr>
<td>Agency$^b$</td>
<td>.34</td>
<td>.06</td>
<td>20.79***</td>
</tr>
<tr>
<td>Pathways$^b$</td>
<td>.30</td>
<td>.01</td>
<td>3.32</td>
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<tr>
<td>Total Hope$^c$</td>
<td>.34</td>
<td>.03</td>
<td>10.57***</td>
</tr>
<tr>
<td>Agency$^c$</td>
<td>.36</td>
<td>.05</td>
<td>17.28***</td>
</tr>
<tr>
<td>Pathways$^c$</td>
<td>.32</td>
<td>.00</td>
<td>1.58</td>
</tr>
<tr>
<td>Total Hope$^d$</td>
<td>.35</td>
<td>.03</td>
<td>12.23***</td>
</tr>
<tr>
<td>Agency$^d$</td>
<td>.37</td>
<td>.05</td>
<td>19.94***</td>
</tr>
<tr>
<td>Pathways$^d$</td>
<td>.33</td>
<td>.01</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Note. Age and gender entered as a block.
$^a$ controlling for age/gender.
$^b$ controlling for age/gender and personality.
$^c$ controlling for age/gender, personality and bipolar optimism.
$^d$ controlling for age/gender, personality, optimism, and spirituality.
SWL = Satisfaction with Life
* $p < .05$. **$p < .01$. ***$p < .001$.

entered as step 3 resulted in pessimism having the same pattern as when age/gender and personality alone were entered. Spirituality, therefore, did not mediate pessimism's effect over and above those variables.

Hope

Table 3 presents the findings for state hope and its agency/pathways subscales. Total hope added significant variance over age/gender and personality, to all three SWB components, and when either bipolar optimism or spirituality was entered in step 3. Agency hope exhibited the exact same pattern as total hope. Pathways hope added additional variance to positive affect and cognitive well-being over age and gender, over age/gender and personality, as well as when either bipolar optimism or spirituality was entered on step 3. Total state hope as well as its subscales consistently contributed to well-being with only pathways hope evidencing the mediating effect of personality, and that only for negative affect.
Table 4. Associations Between Spirituality and Criterion Variables With and Without Controlling for Predictor Variables (N = 256)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Negative Affect</th>
<th>Positive Affect</th>
<th>SWL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>$\Delta R^2$</td>
<td>$F$ Change</td>
</tr>
<tr>
<td>Age/Gender</td>
<td>.06</td>
<td>.06</td>
<td>14.68***</td>
</tr>
<tr>
<td>Personality</td>
<td>.27</td>
<td>.21</td>
<td>26.66***</td>
</tr>
<tr>
<td>Spiritualitya</td>
<td>.07</td>
<td>.02</td>
<td>10.25***</td>
</tr>
<tr>
<td>Spiritualityb</td>
<td>.29</td>
<td>.01</td>
<td>2.04</td>
</tr>
<tr>
<td>Spiritualityc</td>
<td>.33</td>
<td>.01</td>
<td>3.25</td>
</tr>
</tbody>
</table>

Note. Age and gender entered as a block.

a controlling for age/gender.
b controlling for age/gender and personality.
c controlling for age/gender, personality and bipolar optimism.
d controlling for age/gender, personality, and hope.

SWL = Satisfaction with Life

*p < .05. **p < .01. ***p < .001.

**Spirituality**

Table 4 presents the findings for spirituality. Spirituality added significant variance to all three components of SWB when controlling for age and gender. Personality attenuated spirituality's contribution to negative affect but spirituality added additional variance to both positive affect and cognitive well-being. When either bipolar optimism or hope was entered into step 3, spirituality continued to add significant variance only to positive affect. Personality, therefore, attenuated spirituality's contribution to negative affect, while hope and optimism further attenuated its contribution to cognitive well-being, leaving a significant effect for positive affect.

**DISCUSSION**

This study replicates previous findings regarding the relationship between age and personality with subjective well-being. Negative affect decreasing with age (Mroczek & Kolarz, 1998) and the absence of gender differences in levels of SWB are consistent findings (Watson, 2000). The robust relationship between personality and SWB was similarly found here, with neuroticism and extraversion responsible for its effect. When agreeableness, openness, and conscientiousness were removed from the regression equation, the multiple $R$ for all
SWB components predicted by neuroticism and extraversion alone did not change. Conscientiousness predicted positive affect and cognitive well-being, contrary to Watson's (2000) position that, "the possibility remains that these other [big five] traits provide no useful incremental information beyond that already obtainable for Neuroticism and Extraversion" (p. 196) when predicting SWB.

**Optimism Findings**

Consistent with previous research, bipolar optimism correlated moderately with SWB. Though it remained a significant predictor of SWB, personality reduced its predicted variance 10%, 12%, and 7% for negative affect, positive affect, and cognitive well-being, respectively. This supports researchers who maintain that bipolar optimism's effects are somewhat accounted for by neuroticism and extraversion (Marshall et al., 1992), given that these factors were key predictors of SWB as noted above. However, fairness to optimism theory requires noting that its developers put forward the model primarily to explain behavior rather than affective or cognitive well-being (Carver et al., 2003).

Second, the study contributes to the discussion regarding optimism/pessimism as consisting of either a bipolar trait or independent dimensions. When personality is not controlled for, the total scale and each subscale predict all features of SWB. On the affective dimensions when personality is controlled for, however, optimism predicts positive affect only and pessimism predicts negative affect only. This suggests that the bipolar nature of optimism/pessimism operates when neuroticism and extraversion are not accounted for and, when they are, optimism and pessimism function independently. This may help explain the conflicting findings with this scale. Research that uses the LOT-R to predict affective outcomes (e.g., in health psychology studies) may draw different conclusions about optimism as a construct unless it controls for personality.

Third, hope eliminated bipolar optimism's effect on positive affect and pessimism's on cognitive well-being. Hope theory could explain this by suggesting that belief in one's ability to generate goal pathways and to accomplish these goals subsumes generalized beliefs in positive outcomes. Some maintain that the hope items measure belief in past successes and that repeated positive outcomes are what trump bipolar optimism (Carver & Scheier, 2002). Alternately, since opti-
mism continued to predict positive affect when controlling for hope and personality, hope may mediate the effect of pessimism but not optimism.

Finally, spirituality did not mediate any SWB components for optimism in any form.

**Hope**

Hope did as well as optimism in predicting emotional well-being, better than spirituality in predicting negative affect, and considerably better than both in predicting satisfaction with life or cognitive well-being. This latter effect held even when controlling for all the other predictor variables. Total Hope accounted for 17% additional variance in predicting satisfaction with life over personality compared to 5% each for optimism and spirituality.

One source of these relationships could be item redundancy between the state hope scale and the SWB measures. For 102 inter-item correlations, one was .56, 9 (8.8%) between .40 and .49, leaving the remaining 90% less than .40. Thus, the moderate range of these correlations suggests that the effect of state hope in predicting SWB is not attributable to method error. Personality also failed to mediate the effects of hope. The levels of predicted variance remained comparable whether analyzing hope before or after personality. Hope continued to demonstrate these same patterns when optimism or spirituality was entered first as a predictor.

Commentators have questioned whether hope is the precise construct its developer maintains. As noted above, Carver and Scheier (2002) pointed out that the items more accurately describe a sense of success. Others (Aspinwall & Leaf, 2003) suggest that hope is more precisely a measure of personal control. To the first criticism, the rejoinder was "we believe that motivation is by necessity, if one is measuring a dispositional construct, inextricably based on a sense of success" (Shorey, Snyder, Rand, Hockemeyer, & Feldman, 2002). In response to the objection that hope overlaps with personal control, research has found that hope predicts SWB even when controlling for self-efficacy (Magaletta & Oliver, 1999).

Reviewers of this current study raised two important questions about the use of the State Hope scale. Given that the overwhelming majority of research on Snyder's hope theory uses the trait measure, does interpreting the current findings amount to comparing
apples and oranges? In Snyder et al.'s (1996) original validation of the State Hope scale the reported correlation between State and Trait Hope was .79. This is an especially high intercorrelation and, when the error noise from unreliability is taken into account, their similarity increases. As the scales approach redundancy, the issue of comparing apples and oranges becomes less salient.

The reviewers' second question, however, has more weight; namely, from a conceptual standpoint what exactly is state hope? Although the original validation report presented four distinct studies in which state hope predicted meaningful outcomes, none of the studies contrasted state and trait hope. In fact, all of the predicted outcomes were ones typically found for trait hope. This, taken together with the scales' high intercorrelation, certainly leaves open as an empirical question whether state and trait hope differ in any meaningful manner.

Whatever accounts for the effect of state hope on SWB, its relationship with SWB ranks as high as any sequence of dispositional variables and far beyond many categorical and environmental ones. Furthermore, the current study replicates similar findings in which trait hope predicted satisfaction with life when controlling for the five-factor model, despite using a different five-factor scale than the present study (Park, Peterson, & Seligman, 2004).

**Spirituality**

Spirituality predicted all three components of SWB controlling for age and gender, replicating multiple studies that found this link. Incremental validity paradigms in religious research (Piedmont, 1999) recommend determining whether plausible alternative constructs can account for these effects. To the question, "Do other personality constructs account for the relationship between spirituality and SWB", the answer is "yes" or "no" depending on which component is examined. Personality attenuates spirituality's relationship with negative affect only; optimism and hope each mediate its relationship additionally with cognitive well-being. The relationship with positive affect, however, remains when controlling for age, gender, personality, and either optimism or hope. This analysis provides a stringent test for spirituality and appears to answer religious research critics' call for adequate controls when investigating the religion-health connection. This study supports Frederickson's (2002) theory that religion's effect
on positive outcomes is mediated by its relationship with positive affect. One next step is to determine whether this relationship predicts outcomes other than happiness.

The study confirms Carver and Scheier's (2002) observation that in some cases personal agency is not the only source of people's confidence, and thus not the only source that contributes to well-being. In this study, agency hope did not fully mediate spirituality's relationship with positive affect. Furthermore, spirituality contributed over and above the control variables. As Carver and Scheier (2002) suggested, one can generate other sources of confidence that lead to decreased hopelessness (Murphy et al., 2000). What this study suggests for the first time is that spirituality can augment optimism and personal agency in a nondistressed population.

This study demonstrates further the utility of an incremental validity model for religious research. Without the various controls used in this study, the link between SWB and spirituality would be difficult to interpret. This study adds to a series that demonstrates spirituality's link to positive affect rather than negative affect (Francis & Kaldor, 2002). Taken together, these studies suggest that the commonsense understanding of religion's value as a buffer against pain may be overdone. Although stress level does moderate depression outcomes for the religiously committed (Smith, McCullough, & Poll, 2003), in ordinary life circumstances the value of a spiritual outlook may largely be related to its relationship with positive affect. Finally, this study contributes to an understanding of SWB by way of understanding those constructs within positive psychology. Each construct fits in a "top-down" model of human motivation, wherein an expectancy-value model posits the organization of human behavior around goals. Hope and optimism fall on the expectancy end while religiousness and spirituality fall on the value end. Spirituality and religious variables may be unique among psychological constructs in that they both create value content via creeds and norms, and at the same time provide sources of confidence, the "God-is-my-copilot" phenomenon (Aspinwall & Leaf, 2002).

Two study limitations are the cross-sectional design that prohibits causal inferences and its nonrepresentative sample. Acquaintances of graduate students in a psychology of religion course may represent a self-selected network with a heightened interest in religion and spirituality. Despite this possibility, the sample's demographics, including
the religious affiliation proportions, reasonably resemble the United States population at large (Fetzer/National Institute on Aging Workgroup, 1999; Appendix A).

This study supports the construct validity of positive psychology's classification of the domain of transcendence as related to human flourishing (Peterson & Seligman, 2004). Spirituality, hope, and optimism continue to demonstrate a consistent, replicable relationship to SWB components. In keeping with the nature of such a validation project, this study highlights the unique features of each facet and their relationship to each other.

Although this study has used an individual differences framework for understanding its variables, examining them in the light of interdisciplinary research is also desirable. For example, do certain religious worldviews influence the development of hope or optimism? Would such influences be the result of culture or the particular theology of the religious tradition? Sociologists of religion, who examined the effect of images of God on cultural outcomes such as violence, science, and slavery (Stark 2001, 2003), might focus their lens on outcomes such as hope and optimism as well.

Scholars interested in the relationship between science and religion at the conceptual level (McGrath, 2001-2003; Watts, 2002) might also have use for these findings. The mapping of the meaning of overlapping terms in religion and science such as trust, optimism, faith, and happiness is long overdue. To what degree are these terms univocal, equivocal, or analogous? When the Christian theologian, Augustine, wrote in his *City of God* in the early fifth century that, "we are made happy by hope" (1886/1997, p. 403), did he mean by hope what Snyder meant? Augustine commented elsewhere about happiness: "The Holy Scriptures of the Hebrews say, 'Happy is the people whose God is the Lord' (Psalm 144:15). It follows then that people alienated from that God will be miserable" (cited in Wilken, 2003, page 186). Does happiness here mean a combination of positive affect, negative affect, and cognitive well-being? Would these components be important to spiritual persons in the same way as they are in positive psychology or mental health? These and a host of related questions mark some of the interdisciplinary territory that lies ahead for our scientific understanding of these venerable terms in human religious experience.
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