

The Structure of Psychological Well-Being Revisited

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A theoretical model of psychological well-being that encompasses 6 distinct dimensions of wellness (Autonomy, Environmental Mastery, Personal Growth, Positive Relations With Others, Purpose in Life, Self-Acceptance) was tested with data from a nationally representative sample of adults ($N = 1,108$), aged 25 and older, who participated in telephone interviews. Confirmatory factor analyses provided support for the proposed 6-factor model, with a single second-order super factor. The model was superior in fit over single-factor and other artifactual models. Age and sex differences on the various well-being dimensions replicated prior findings. Comparisons with other frequently used indicators (positive and negative affect, life satisfaction) demonstrated that the latter neglect key aspects of positive functioning emphasized in theories of health and well-being.

For more than 20 years, the study of psychological well-being has been guided by two primary conceptions of positive functioning. One formulation, traceable to Bradburn's (1969) seminal work, distinguished between positive and negative affect and defined happiness as the balance between the two. Conceptual and methodological refinements built on this early operationalization of well-being. For example, the postulated independence of positive and negative affect was challenged and linked with the failure to distinguish between the intensity and the frequency of affect (Diener, Larsen, Levine, & Emmons, 1985). Frequency of positive and negative affect tends to correlate negatively, whereas intensity correlations are generally positive. These conflicting relations were said to suppress the association between positive and negative affect, thereby creating an illusion that the components are independent. Of the two, frequency has been promoted as the better indicator of well-being because it can be better measured and is more strongly related to long-term emotional well-being than intensity is (Diener & Larsen, 1993; Diener, Sandvik, & Pavot, 1991). Other initiatives have focused on measurement issues, calling for more valid and reliable indicators of positive and negative affect (Watson, Clark, & Tellegen, 1988) and suggesting that measurement error obscures the bipolarity of positive and negative affect (Green, Goldman, & Salovey, 1993).

The second primary conception, which has gained prominence among sociologists, emphasizes life satisfaction as the key indicator of well-being. Viewed as a cognitive component, life

satisfaction was seen to complement happiness, the more affective dimension of positive functioning (e.g., Andrews & McKennell, 1980; Andrews & Withey, 1976; Bryant & Veroff, 1982; Campbell, Converse, & Rodgers, 1976). Still other studies parsed well-being according to global questions about overall life satisfaction and domain-specific questions about work, income, social relationships, and neighborhood (Andrews, 1991; Diener, 1984). Interest in these investigations frequently centered on social change—whether quality of life in America meant something different from one era to the next and whether reported levels of well-being and their correlates varied over time (see also Bryant & Veroff, 1982).

Altogether, prior endeavors have grappled minimally with the core underlying question: What does it mean to be well psychologically? That is, extant indicators have been perpetuated with little debate as to whether they captured key features of human wellness. Bradburn's (1969) classic study, for example, gave little attention to the fundamental meaning of well-being. That positive and negative affect emerged as independent dimensions was, in fact, a serendipitous finding from a study conceived for other purposes. Similarly, life satisfaction measures were generated with a concern for practical applications of research findings, not explication of essential meanings of wellness (Sauer & Warland, 1982). Quality-of-life research has also been described as being data driven rather than based on a clear conceptual framework (Headey, Kelley, & Wearing, 1993). Waterman's (1993) distinction between eudaimonic and hedonic conceptions of happiness provides a notable exception in this largely atheoretical climate.¹

The absence of theory-based formulations of well-being is

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¹ When it comes to the task of explaining the *process* of well-being, that is, how individuals come to possess or not possess this quality, the theoretical terrain is much richer (see Diener, 1984, for a review). Our own work has targeted adults' life experiences and their interpretations of them (e.g., through social comparison processes) as key explanatory factors (e.g., Heidrich & Ryff, 1993a; Ryff & Essex, 1992; Ryff, Lee, Essex, & Schmutte, 1994). Here we emphasize the need for theory in the prior task, namely, defining the essential nature of well-being, the indicators of which serve as outcome variables in such process studies.

puzzling given abundant accounts of positive functioning in subfields of psychology (see Ryff, 1985, 1989a). From developmental psychology, Erikson's (1959) psychosocial stages, Buhler's (1935) basic life tendencies, and Neugarten's (1973) personality changes articulate wellness as trajectories of continued growth across the life cycle. Clinical psychologists offer further descriptions of well-being through Maslow's (1968) conception of self-actualization, Allport's (1961) formulation of maturity, Rogers' (1961) depiction of the fully functioning person, and Jung's (1933) account of individuation. The mental health literature, which typically elaborates the negative end of psychological functioning, nonetheless includes some exposition of positive health (Birren & Renner, 1980; Jahoda, 1958).

The convergence of these multiple frameworks of positive functioning served as the theoretical foundation to generate a multidimensional model of well-being (Ryff, 1989b, 1995). Included are six distinct components of positive psychological functioning (see Appendix). In combination, these dimensions encompass a breadth of wellness that includes positive evaluations of oneself and one's past life (Self-Acceptance), a sense of continued growth and development as a person (Personal Growth), the belief that one's life is purposeful and meaningful (Purpose in Life), the possession of quality relations with others (Positive Relations With Others), the capacity to manage effectively one's life and surrounding world (Environmental Mastery), and a sense of self-determination (Autonomy).

To understand the nature of wellness, descriptive studies have focused on age and gender profiles. The original validation sample (Ryff, 1989b) compared young (18–29 years old), midlife (30–64 years old), and old-aged (65 years old or older) adults and found incremental age profiles for Environmental Mastery and Autonomy (particularly from young adulthood to midlife), decremental age profiles for Purpose in Life and Personal Growth (particularly from midlife to old age), and no age differences for Self-Acceptance and Positive Relations With Others. Most of these patterns were replicated in another study (Ryff, 1991) involving the same three age groups. In both investigations, women scored significantly higher than men on Positive Relations With Others and Personal Growth (findings for the latter dimension approached statistical significance in the first study), with subsequent studies replicating these sex differences (Ryff et al., 1994; Ryff, Lee, & Na, 1993).

The proposed multidimensional structure of well-being has not, however, been investigated with analytic procedures that test the fit of the theoretical model with empirical data. High correlations among certain aspects of well-being (Ryff, 1989b) underscore the need for theory-guided structural analyses. In addition, the proposed theoretical model has not been assessed in a nationally representative sample—prior work has been conducted primarily with selective, community samples. Data from representative samples are needed to test the generalizability of prior patterns of age and sex differences. Thus, the objectives of this study were threefold: (a) to test, with a nationally representative sample, the proposed multidimensional model of well-being; (b) to examine the replicative consistency of age and sex differences on the various indicators of well-being; and (c) to compare the relationships between the theory-based dimensions of well-being and three prominent indica-

tors from prior research (i.e., happiness, life satisfaction, depression).

Method

Sample

Data are reported from a national probability sample of noninstitutionalized, English-speaking adults, aged 25 or older, residing in the 48 contiguous states in the United States, and whose households included at least one telephone. Households were selected with random digit dialing procedures. An adult from each household was then selected randomly and interviewed for approximately 30 min by telephone. The response rate was approximately 62%. Data were weighted to correct for overrepresentation of households with more than one telephone line, for underrepresentation of adults aged 25 or older living in households with more than one adult, and to match census bureau estimates of the proportion of English-speaking adults, aged 25 or older, residing in the major geographical regions (i.e., Northeast, Midwest, South, and West) of the United States.

The total sample size was 1,108, of which 59% were female, 87% were Caucasian, and the average age was 45.6 years ($SD = 14.8$ years). Most respondents, about 70%, were married. Fully one-third had graduated from high school only; 26% had some college background; and 16% were college graduates. Just over half of the sample reported an annual household income between \$10,000 and \$39,999, of which 19% reported an income between \$10,000 and \$19,999, 21% between \$20,000 and \$29,999, and 18% reported a household income of between \$30,000 and \$39,999.

For analytic purposes, we divided respondents into three age groups: young adults ($n = 133$) were between the ages of 25 and 29, midlife adults ($n = 805$) were between the ages of 30 and 64, and older adults ($n = 160$) were 65 or older. About 60% of the sample in each age group was female. Though each age group consisted mostly of Caucasians, the racial homogeneity increased in the group of older adults. More than half the young adults either had some college or graduated from college, whereas only 44% of the middle-aged, and still fewer of older adults (33%), had some college or graduated from college. Compared with the young adults, about 70% of the middle-aged, as well as the older adults, were married. The modal income range for young adults was between \$30,000 and \$39,999, \$20,000–\$29,999 for middle-aged adults, and \$10,000–\$19,999 for the older adults.

Data from two additional samples (Ryff, 1989b; Ryff et al., 1994) are included for comparative purposes. Both were community volunteer samples, with the former consisting of young, midlife, and old-aged adults (see previous definitions of age ranges) and the latter including only midlife adults. Detailed descriptions of these samples are available in Ryff (1989b) and Ryff et al. (1994).

Measures and Procedure

We generated definitions of the six dimensions of psychological well-being (see Table 1) from the multiple theoretical accounts of positive functioning. In the initial validation study (Ryff, 1989b), each dimension was operationalized with a 20-item scale (that showed high internal consistency and test-retest reliability as well as convergent and discriminant validity with other measures). To accommodate time and cost restrictions of a national survey, we chose only 3 of the original 20 items to measure each construct. Because all parent scales had multifactorial structures, we selected items from subfactors within each longer scale to maximize the conceptual breadth of the shortened scales. The shortened scales correlated from .70 to .89 with 20-item parent scales. Each scale included both positively and negatively phrased items. The response scale was a 6-point continuum, ranging from *completely disagree* to *completely agree*. Interviewers administered the items using an

Table 1
Descriptive Statistics of Theoretically Grounded Scales of Psychological Well-Being

Scale	1	2	3	4	5	6
1. Self-Acceptance	—	.46	.40	.22	.18	.22
2. Environmental Mastery		—	.38	.13	.23	.28
3. Positive Relations			—	.14	.16	.15
4. Purpose in Life				—	.31	.13
5. Personal Growth					—	.20
6. Autonomy						—
α	.52	.49	.56	.33	.40	.37
M	14.6	14.9	14.8	14.4	15.7	15.2
SD	3.1	2.8	3.2	3.2	2.5	2.6

Note. All correlation coefficients are statistically significant at the .05 level.

unfolding technique (Groves, 1989)—first asking whether the respondent agreed or disagreed with the statement and then asking how much (strongly, moderately, or slightly).

For comparative purposes, the interview also included single-item indicators of happiness and life satisfaction. For the former, respondents answered how much of the time during the past month (0 = none, 1 = some, 2 = most, 3 = all) they felt happy (mean score = 1.7, SD = 0.64). For the latter, respondents summarized how things were going in their life on a scale from 0 (*the worst possible life you could imagine*) to 10 (*the best possible life you could imagine*; mean score = 7.7, SD = 1.6). Depression was also measured with eight items indicating how much of the time (0 = none, 1 = some, 2 = most, 3 = all) during the past month respondents felt (1) full of life, (2) worn out, (3) tired, (4) downhearted and blue, (5) calm and peaceful, (6) nervous, (7) had a lot of energy, and (8) were so down in the dumps that nothing could cheer you up (mean score = 8.1, SD = 3.4). Factor analyses revealed two underlying dimensions, which were labeled Dysfunctional Energy and Dysfunctional Affect.

From the two prior investigations (Ryff, 1989b; Ryff et al., 1994), data are reported on the six measures of well-being (20-item scales in the first study and 14-item scales in the second) in relation to positive and negative affect, affect balance (Bradburn, 1969), the Life Satisfaction Index (Neugarten, Havighurst, & Tobin, 1961), the Zung Depression Scale (Zung, 1965), the Center for Epidemiologic Study Depression Scale (CES-D; Radloff, 1977), and single-item indicators of overall happiness and life satisfaction. (See published studies for details.)

Results

Item and Scale Analyses

Preliminary analysis (results not shown) indicate that the 18 items continue to meet psychometric criteria, with each item correlating strongly and positively with only its own scale.² Scale intercorrelations are modest (see Table 1), ranging from .13 (e.g., Purpose in Life and Autonomy) to .46 (Self-Acceptance and Environmental Mastery). Estimates of internal consistency (alpha)³ coefficients were low to modest, ranging from .33 (Purpose in Life) to .56 (Positive Relations With Others). The alpha coefficient is a conservative estimate of internal reliability for most (congeneric indicators) scales (Bollen, 1989). The modest alpha coefficients likely reflect the small number of indicators per scale and the fact that items were chosen to represent the conceptual breadth within each construct (see rationale for item selection in *Measures and Procedure* section) rather than to maximize internal consistency.

Age and Sex Differences in Well-Being

Mean-level analyses, despite dramatic reductions in depth of measurement, replicated many prior findings (see Figure 1). The subscales of Purpose in Life, $F(2, 921) = 19.8, p < .001$; and Personal Growth, $F(2, 921) = 16.4, p < .001$; continued to show decremental age profiles (with scores of the oldest respondents significantly lower than those of the two younger age groups⁴); Environmental Mastery, $F(2, 921) = 3.05, p < .05$, also continued to show age increments (with both older groups scoring significantly higher than young adults), and self-acceptance showed no age differences. Autonomy again showed age increments, $F(2, 921) = 4.97, p < .01$, but only from young adulthood to midlife. Although the two previous studies indicated no age differences in Positive Relations, these data showed incremental scores with age, $F(2, 921) = 7.12, p < .001$ (older respondents scored higher than both younger age groups). The only scale that showed significant sex differences was Positive Relations With Others, $F(1, 921) = 8.94, p < .01$, with women again scoring higher than men.

Structural Analyses

We estimated the parameters and fit of the measurement models with LISREL 7.2 (Jöreskog & Sörbom, 1989). In all models the measurement error was assumed to occur randomly—our goal was not to improve the fit of the measurement model but to determine whether the “clean” model (i.e., no correlated measurement error) fit the data well. Besides the theoretical model, several other models capturing distinct and perhaps more parsimonious explanations for the structure of the data also were assessed. For example, we estimated a unidimensional model in which all indicators loaded on a single factor of well-being. We also explored artifacts of measurement by esti-

² Nearly all of the item-to-scales coefficients are statistically significant, a reflection of the large sample size and, hence, statistical power.

³ To be consistent with other analyses in the article, we used listwise deletion of missing data when computing alpha coefficients. The sample size after listwise deletion is $n = 928$, compared with a total sample size of 1,108.

⁴ Contrasts between each age group were made with Tukey's Honestly Significant Differences procedure, with alpha set at .05.

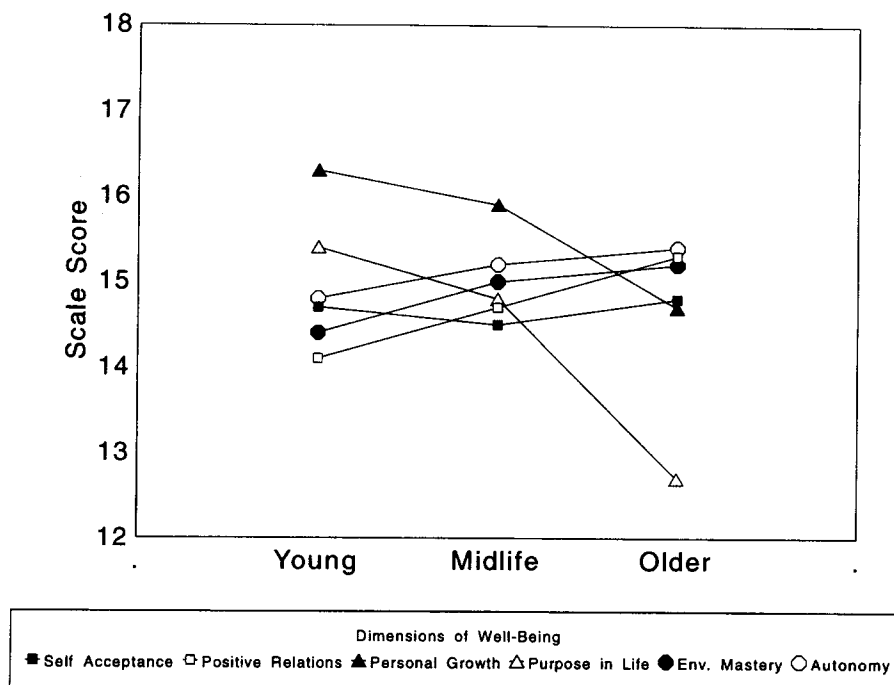


Figure 1. Age differences on the six 3-item measures of psychological well-being. Env. Mastery = Environmental Mastery.

mating two types of models, each suggesting that respondents answer questions to portray a positive self-image. The first artifactual model extended the argument that a single dimension (i.e., well-being) explained the structure of the data and further specified that negatively worded items loaded on an artifact dimension. A second artifactual model suggests that people engage in an agreement-disagreement bias to portray a positive self-image: They agree with all positively worded, and disagree with all negatively worded, items. Thus, we estimated a model with two latent artifact constructs, one for positively worded items and a second for negatively worded items. Next, we compared the fit of the theoretical model with the single factor and artifactual models with a super-factor model in which the six latent constructs are effects of a second-order latent construct called *psychological well-being*.

Descriptive analysis indicates that the marginal distributions of nearly all items are skewed substantially (results not shown). We therefore used weighted least squares estimation, which produces distribution-free and asymptotically unbiased and efficient estimates. In theory, weighted least squares is superior to maximum likelihood estimation for fitting models with indicators whose distributions are non-normal and skewed, especially as sample size increases (Bollen, 1989; Boomsma, 1983; Jöreskog & Sörbom, 1989).⁵ We produced the variance-covariance matrix and asymptotic covariance matrix of the estimated variances and covariances using PRELIS (Jöreskog & Sörbom, 1988). Using listwise deletion of missing data, we purged 180 respondents from the sample. The conclusions using mean-substitution of missing data were unchanged. We present only the results using listwise deletion of missing data.

Table 2 displays three indices of the overall fit of each model.

Small and statistically nonsignificant values of the chi-square statistic indicate good-fitting models. However, none of the models fit the data according to chi-square, which is sensitive to sample size and sample variability (Bollen, 1989; Raykov, Tomer, & Nesselrode, 1991). We therefore report the Bayesian information criterion (BIC; Raftery, 1993), which is increasingly likely to indicate good fitting models as sample size increases. Positive values of BIC indicate poor-fitting models, and negative values indicate good-fitting models. Moreover, smaller (i.e., increasingly negative) values of BIC indicate increasingly better-fitting models. Last, the adjusted goodness-of-fit index (AGFI) also indicates the overall fit of the model. The AGFI varies between 0.0 and 1; values that approach unity indicate better models. As a rule of thumb, values of AGFI .90 or higher indicate very-good-fitting models.

Comparing the overall fit indices for the first four models in Table 3 reveals that the six-factor model is the best-fitting model. The chi-square value is lower, AGFI is higher, and BIC is increasingly negative. The six-factor model, in fact, reveals a vast improvement in fit over each of the preceding models, particularly the single-factor model. In turn, Model 5—the super-factor model—proposes that the six factors are a function of, or are caused by, another latent construct. That is, each of the six factors belongs to a single conceptual domain called *well-being*.

⁵ There are trade-offs to each estimation technique. One must be concerned with the *robustness* of maximum likelihood estimates and the *consistency* of asymptotic, distribution-free estimates. The conclusions of this study, however, remain the same when either type of estimator is used (results of maximum likelihood estimation are available from Carol D. Ryff on request).

Table 2
Confirmatory Factor Analyses: Indices of Fit Based on Weighted Least Squares Estimation

Model	χ^2	df	AGFI	BIC
1. Single-factor	531.9	135	.85	-38.18
2. Single-factor and negative item artifact ^a	442.6	127	.86	-93.70
3. Two-factor, negative and positive item artifact	488.2	134	.86	-47.70
4. Six-factor	339.1	120	.89	-167.64
5. Second-order, single super-factor	378.7	129	.89	-166.04

Note. $n = 928$. AGFI = adjusted goodness-of-fit index; BIC = Bayesian information criterion.

^a The correlation between the latent constructs, overall well-being and the negative item artifact, is constrained to be 0.

This model is more restrictive and parsimonious than the six-factor model. Comparing the BIC statistic, the super-factor model fits the data better than the six-factor model. According to Raftery (1993), the BIC statistic should increase at least 10 points for each degree of freedom lost to conclude confidently that the more complex model (i.e., the model with fewer degrees of freedom—Model 4) fits the data better than the more parsimonious model (i.e., Model 5). The difference in the BIC statistic is only about 2 with a difference of 9 degrees of freedom.

It is important to emphasize that the super-factor model is not the same as the single-factor model. The super-factor model says that six factors fit the data and that these six factors measure a single latent construct called psychological well-being. Parsimony exists, but at a higher order. Thus, there is a hierarchical structure in which general well-being has its effects through the six content domains specified a priori by guiding psychological theory. The age analyses further clarify that life course effects on well-being cannot be explained with a general factor because these age effects are not uniform—different dimensions of well-being show different age profiles.

Table 3 contains the estimates of the correlations between the unmeasured, latent constructs. The estimated correlations between the latent construct are important for descriptive reasons and, in this case, to highlight the necessity of theory-driven structural analysis. Most of the correlations are modest, around .50. However, the correlation between Self-Acceptance and En-

vironmental Mastery is very high. Such a high correlation between latent constructs could indicate redundancy or shared sources of variance. We note, however, that despite the apparent overlap, Environmental Mastery and Self-Acceptance exhibit different age profiles. Thus, possible redundancy in structural analyses is contrasted with apparent distinctness in life course analyses, illustrating the importance of theory and multiple modes of testing it in assessing the structure of the well-being domain.

Correlations With Other Measures

Table 4 provides zero-order correlations from three separate studies of each of the six scales of well-being with other prominent indicators of well-being, namely, happiness, life satisfaction, and depression. Across these data sets, measures of happiness (affect balance or single-item indicators) show modest to strong associations with Self-Acceptance and Environmental Mastery, somewhat weaker links with Purpose in Life, and still weaker ties to Positive Relations With Others, Personal Growth, and Autonomy. Parallel, although generally stronger, patterns of association are evident for life satisfaction (measured both as a multi-item scale and as single-item indicators)—strongest relations are evident for self-acceptance and environmental mastery, with the remaining coefficients showing weak to modest associations. Finally, the multiple indicators of depression show consistently negative associations with all dimensions of well-being, with the strongest patterns again evident for Self-Acceptance and Environmental Mastery.

Discussion

The purpose of the present study was to test the proposed theoretical structure of a multidimensional model of psychological well-being. Drawn from points of convergence in prior theories of life course development, clinical accounts of positive functioning, and mental health conceptions, the model includes six distinct components of psychological wellness: Self-Acceptance, Environmental Mastery, Purpose in Life, Positive Relations With Others, Personal Growth, and Autonomy. Confirmatory factor analyses with data from a nationally representative sample supported the proposed multidimensional

Table 3
Correlations Among the Latent Constructs, From Weighted Least Squares Estimates of the Six-Factor Model

Construct	1	2	3	4	5	6
1. Self-Acceptance	—					
2. Positive Relations	.65	—				
3. Environmental Mastery	.85	.65	—			
4. Personal Growth	.53	.31	.56	—		
5. Autonomy	.53	.24	.59	.51	—	
6. Purpose in Life	.55	.30	.38	.64	.39	—

Note. $n = 928$. All t values—that is, the ratio of the estimated coefficient to its estimated asymptotic standard error—are statistically significant at the .01 level.

Table 4
Correlations Between Theory-Based Scales of Well-Being and Prior Measures

Study	Prior measures	New scales					
		SA	PR	PL	PG	AU	EM
Ryff (1989b) ^a	1. Happiness						
	a. Affect balance	.55	.30	.42	.25	.36	.62
	b. Negative affect	-.41	-.19	-.29	-.11 ^c	-.30	-.51
	c. Positive affect	.41	.26	.45	.36	.26	.42
	2. Satisfaction						
	a. Life Satisfaction Index	.73	.43	.59	.38	.26	.61
Ryff et al. (1994) ^b	3. Depression						
	a. Zung Depression Scale	-.59	-.33	-.60	-.48	-.38	-.60
	1. Happiness						
	a. Single item, global	.54	.38	.41	.16	.31	.51
Present study	2. Satisfaction						
	a. Single item, global	.64	.40	.55	.21	.30	.61
	3. Depression						
	a. CES-D	-.70	-.46	-.56	-.22	-.48	-.68
Present study	1. Happiness						
	a. Single item, amount during past month	.36	.26	.13	.15	.08	.40
	2. Satisfaction						
	a. Single item, rate life overall	.42	.35	.10	.18	.12	.39
	3. Depression						
	a. Dysfunctional energy	-.32	-.22	-.05 ^c	-.18	-.14	-.41
	b. Dysfunctional affect	-.45	-.35	-.14	-.17	-.18	-.50

Note. SA = Self-Acceptance; PR = Positive Relations With Others; PL = Purpose in Life; PG = Personal Growth; AU = Autonomy; EM = Environmental Mastery; CES-D = Center for Epidemiological Study Depression Scale (Radloff, 1977).

^a Affect Balance (Bradburn, 1969), Negative Affect, and Positive Affect are the subscales that comprise Affect Balance; Life Satisfaction Index (Neugarten et al., 1961); Zung Depression Scale (Zung, 1965).

^b The happiness item is: "All things considered, how happy are you?" The satisfaction item is: "Thinking about your life as a whole, how satisfied are you?"

^c Not statistically significant at the .05 alpha level. All other coefficients are statistically significant at least at the .05 alpha level.

structure: The model that best fit the data was one of six primary factors joined together by a single higher order factor. This model showed dramatic improvement in fit over suggested alternatives, especially the single-factor model. The theoretical formulation of well-being was thus supported as a multifaceted domain encompassing positive self-regard, mastery of the surrounding environment, quality relations with others, continued growth and development, purposeful living, and the capacity for self-determination.

The data also point to the replicative consistency of age and sex differences on these various aspects of well-being. Across multiple investigations having wide variation in depth of measurement (20-item, 14-item, and 3-item scales), declining age profiles were obtained on Purpose in Life and Personal Growth, incremental scores were evident for Environmental Mastery and Autonomy, and no age differences were obtained for Self-Acceptance. Patterns for Positive Relations varied between showing no age differences or incremental patterns. Longitudinal data are obviously needed to clarify whether these age profiles represent maturational changes, or cohort differences. Whatever the "source" of these differences, the results un-

derscore the diversity of life course and cohort profiles of well-being. Finally, across all studies, women were found to score higher than men on Positive Relations With Others. Departing from prior results including cross-cultural comparison (Ryff et al., 1993), these data did not show that women also had higher scores on personal growth. Presumably, it is the extensive reduction in content of the growth scale, or the difference in sampling, that accounts for this divergence from prior studies.

Comparison of the theory-based indicators of well-being with other frequently used measures indicated moderate to strong associations between two scales (Self-Acceptance and Environmental Mastery) and single- and multi-item scales of happiness, life satisfaction, and depression. However, the remaining four dimensions of well-being (Positive Relations With Others, Purpose in Life, Personal Growth, Autonomy) showed mixed or weak relationships with these prior indicators. Continued empirical reliance on these earlier indices thus translates to neglect of key aspects of positive functioning emphasized in theoretical accounts.

It is important to recognize that these guiding theories give surprisingly little commentary to happiness or positive affect as

a defining feature of human wellness. In fact, it has been argued that certain aspects of positive functioning, such as the realization of one's goals and purposes, require effort and discipline that may well be at odds with short-term happiness (Waterman, 1984). In addition, philosophical accounts caution against a focus on happiness as the ultimate good in life. History provides countless examples of those who lived ugly, unjust, or pointless lives who were nonetheless happy (see Becker, 1992). Even when present in exemplary lives, philosophers construe happiness not as an end in itself but a byproduct of other, more noble pursuits (Mill, 1873/1989). These observations, combined with the finding that most people (even the disabled, abused, and unemployed people) report themselves to be happy (Diener, 1993; Taylor & Brown, 1988), raise questions (theoretical, philosophical, empirical) about the scientific attention lavished on happiness and positive affect, particularly at the expense of other aspects of positive functioning. Comprehensive accounts of psychological well-being need also to probe people's sense of whether their lives have purpose, whether they are realizing their given potential, what is the quality of their ties to others, and if they feel in charge of their own lives.

Apart from expanding the substantive meaning of psychological well-being, our call to reexamine the contours of positive functioning illustrates the complexity involved in defining and assessing structure within a particular domain. Ideally, structural analyses begin with a well-articulated theoretical framework, which is then operationalized and tested with procedures designed to assess the proposed theory, such as confirmatory factor analysis. However, in the process, it becomes apparent that final answers do not end with examination of factorial structure. In this investigation such analyses indicated that two of the six theoretical constructs (Self-Acceptance and Environmental Mastery) were highly correlated. In other words, data—not theory—suggested a possible five-factor model, which would combine indicators of Self-Acceptance and Environmental Mastery. Examination of structure through other analyses, namely, life course profiles, showed, however, that Self-Acceptance and Environmental Mastery exhibited distinct age profiles (the former showing little variation by age, the latter showing incremental age differences). Analyses of additional group differences (e.g., by social class, ethnicity, or culture) would further inform understanding of the basic structure of well-being. Still other pertinent information pertains to how the different dimensions of positive functioning vary as *outcome measures* in process-oriented studies (see Heidrich & Ryff, 1993a, 1993b; Ryff & Essex, 1992; Ryff et al., 1994; Schmutte & Ryff, 1994; Tweed & Ryff, 1991; Van Riper, Ryff, & Pridham, 1992). To the extent that life transitions affect some, but not other dimensions of wellness, further evidence is garnered for the multidimensionality of the well-being domain. Finally, assessments of structure need to incorporate method variation. All of the analyses described thus far rely on self-report techniques, which may include self-presentation biases. Augmenting these data with observational methods, or data obtained from significant others (e.g., spouses), would strengthen the veracity of the hypothesized model. In sum, mapping the fundamental structure of psychological well-being is a multitask agenda, requiring ongoing syntheses of diverse sources of evidence. For now, we offer

the provisional conclusion that there is more to being well than feeling happy and satisfied with life.

References

- Allport, G. W. (1961). *Pattern and growth in personality*. New York: Holt, Rinehart & Winston.
- Andrews, F. M. (1991). Stability and change in levels and structure of subjective well-being. *Social Indicators Research*, 25, 1–30.
- Andrews, F. M., & McKennell, A. C. (1980). Measures of self-reported well-being. *Social Indicators Research*, 8, 127–156.
- Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being: America's perception of life quality*. New York: Plenum.
- Becker, L. C. (1992). Good lives: Prolegomena. *Social Philosophy and Policy*, 9(2), 15–37.
- Birren, J. E., & Renner, V. J. (1980). Concepts and issues of mental health and aging. In J. E. Birren & R. B. Sloane (Eds.), *Handbook of mental health and aging* (pp. 3–33). Englewood Cliffs, NJ: Prentice Hall.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Boomsma, A. (1983). *On the robustness of LISREL (maximum likelihood estimation) against small sample size and non-normality*. Amsterdam: Sociometric Research Foundation.
- Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine.
- Bryant, F. B., & Veroff, J. (1982). The structure of psychological well-being: A sociohistorical analysis. *Journal of Personality and Social Psychology*, 43, 653–673.
- Buhler, C. (1935). The curve of life as studied in biographies. *Journal of Applied Psychology*, 19, 405–409.
- Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. New York: Russell Sage Foundation.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542–575.
- Diener, E. (1993). *Most Americans are happy*. Unpublished manuscript, Department of Psychology, University of Illinois.
- Diener, E., & Larsen, R. J. (1993). The experience of emotional well-being. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 405–415). New York: Guilford Press.
- Diener, E., Larsen, R. J., Levine, S., & Emmons, R. A. (1985). Intensity and frequency: Dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology*, 48, 1253–1265.
- Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N. Schwartz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 119–139). Elmsford, NY: Pergamon Press.
- Erikson, E. (1959). Identity and the life cycle. *Psychological Issues*, 1, 18–164.
- Green, D. P., Goldman, S. L., & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology*, 64, 1029–1041.
- Groves, R. (1989). *Survey errors and survey costs*. New York: Wiley.
- Headey, B., Kelley, J., & Wearing, A. (1993). Dimensions of mental health: Life satisfaction, positive affect, anxiety and depression. *Social Indicators Research*, 29, 63–82.
- Heidrich, S. M., & Ryff, C. D. (1993a). The role of social comparison processes in the psychological adaptation of elderly adults. *Journal of Gerontology*, 48, 127–136.
- Heidrich, S. M., & Ryff, C. D. (1993b). Physical and mental health in later life: The self-system as mediator. *Psychology and Aging*, 8, 327–338.
- Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.

- Jöreskog, K. G., & Sörbom, D. (1988). *PRELIS: A program for multivariate data screening and data summarization* (2nd ed.). Mooresville, IN: Scientific Software.
- Jöreskog, K. G., & Sörbom, D. (1989). *LISREL 7: A guide to the program and applications* (2nd ed.). Chicago: SPSS.
- Jung, C. G. (1933). *Modern man in search of a soul* (W. S. Dell & C. F. Baynes, Trans.). New York: Harcourt, Brace & World.
- Maslow, A. H. (1968). *Toward a psychology of being* (2nd ed.). New York: Van Nostrand.
- Mill, J. S. (1989). *Autobiography*. London: Penguin Books. (Original work published 1873)
- Neugarten, B. L. (1973). Personality change in late life: A developmental perspective. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 311-335). Washington, DC: American Psychological Association.
- Neugarten, B. L., Havighurst, R., & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology*, 16, 134-143.
- Radloff, L. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401.
- Raftery, A. E. (1993). Bayesian model selection in structural equations models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 163-180). Newbury Park, CA: Sage.
- Raykov, T., Tomer, A., & Nesselroade, J. R. (1991). Reporting structural equation modeling results in *Psychology and Aging*: Some proposed guidelines. *Psychology and Aging*, 6, 499-503.
- Rogers, C. R. (1961). *On becoming a person*. Boston: Houghton Mifflin.
- Ryff, C. D. (1985). Adult personality development and the motivation for personal growth. In D. Kleiber & M. Maehr (Eds.), *Advances in motivation and achievement: Vol. 4. Motivation and adulthood* (pp. 55-92). Greenwich, CT: JAI Press.
- Ryff, C. D. (1989a). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful aging. *International Journal of Behavioral Development*, 12, 35-55.
- Ryff, C. D. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.
- Ryff, C. D. (1991). Possible selves in adulthood and old age: A tale of shifting horizons. *Psychology and Aging*, 6, 286-295.
- Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, 4, 99-104.
- Ryff, C. D., & Essex, M. J. (1992). The interpretation of life experience and well-being: The sample case of relocation. *Psychology and Aging*, 7, 507-517.
- Ryff, C. D., Lee, Y. H., Essex, M. J., & Schmutte, P. S. (1994). My children and me: Midlife evaluations of grown children and self. *Psychology and Aging*, 9, 195-205.
- Ryff, C. D., Lee, Y. H., & Na, K. C. (1993, November). Through the lens of culture: Psychological well-being at midlife. Paper presented at the meetings of Gerontological Society of America, New Orleans, LA.
- Sauer, W. J., & Warland, R. (1982). Morale and life satisfaction. In D. J. Mangen & W. A. Peterson (Eds.), *Research instruments in social gerontology: Vol. 1, Clinical and social psychology* (pp. 195-240). Minneapolis: University of Minnesota Press.
- Schmutte, P. S., & Ryff, C. D. (1994). Success, social comparison, and self-assessment: Parents' midlife evaluations of sons, daughters, and self. *Journal of Adult Development*, 1, 109-126.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193-210.
- Tweed, S., & Ryff, C. D. (1991). Adult children of alcoholics: Profiles of wellness and distress. *Journal of Studies on Alcohol*, 52, 133-141.
- Van Riper, M., Ryff, C. D., & Pridham, K. (1992). Parental and family well-being in families of children with Down syndrome: A comparative study. *Research in Nursing and Health*, 15, 227-235.
- Waterman, A. S. (1984). *The psychology of individualism*. New York: Praeger.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678-691.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Zung, W. K. (1965). A self-rating depression scale. *Archives of General Psychiatry*, 12, 63-70.

(Appendix follows on next page)

Appendix

Definitions of Theory-Guided Dimensions of Well-Being

Self-Acceptance

High scorer: possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.

Low scorer: feels dissatisfied with self, is disappointed with what has occurred in past life, is troubled about certain personal qualities, wishes to be different than what he or she is.

Positive Relations With Others

High scorer: has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.

Low scorer: has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

Autonomy

High scorer: is self-determining and independent, able to resist social pressures to think and act in certain ways, regulates behavior from within, evaluates self by personal standards.

Low scorer: is concerned about the expectations and evaluations of others, relies on judgments of others to make important decisions, conforms to social pressures to think and act in certain ways.

Environmental Mastery

High scorer: has a sense of mastery and competence in managing the environment, controls complex array of external activities, makes effective use of surrounding opportunities, able to choose or create contexts suitable to personal needs and values.

Low scorer: has difficulty managing everyday affairs, feels unable to change or improve surrounding context, is unaware of surrounding opportunities, lacks sense of control over external world.

Purpose in Life

High scorer: has goals in life and a sense of directedness, feels there is meaning to present and past life, holds beliefs that give life purpose, has aims and objectives for living.

Low scorer: lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose in past life; has no outlooks or beliefs that give life meaning.

Personal Growth

High scorer: has a feeling of continued development, sees self as growing and expanding, is open to new experiences, has sense of realizing his or her potential, sees improvement in self and behavior over time, is changing in ways that reflect more self-knowledge and effectiveness.

Low scorer: has a sense of personal stagnation, lacks sense of improvement or expansion over time, feels bored and uninterested with life, feels unable to develop new attitudes or behaviors.

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