

Factors of Happiness

A Longitudinal Analysis of Personality,
Life Events, and Subjective Well-Being

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Abstract

A substantial amount of empirical evidence has accumulated within the life events and life satisfaction literatures to challenge the long-held assumption that life events have a significant impact on subjective well-being (Abbey & Andrews, 1985; Atkinson, 1982; Brickman, Coates, & Janoff-Bulman, 1978; Costa, McCrae, & Zonderman, 1987; Kammann, 1982; Stones & Kozma, 1986). What many of these researchers propose is that stable personality traits override the effects of life change. In their dynamic equilibrium model of happiness, however, Headey and Wearing (1989) provide evidence that certain personality traits predispose individuals to experience certain types of events and that major life events do impact life satisfaction over and above the influence of stable personality traits. Using data from the second wave of a four year longitudinal analysis, this study examines three key aspects of the relationship between life events, personality, and subjective well-being (SWB): (1) Is SWB a relatively stable, long-term construct? (2) Can personality variables predispose individuals to experience certain kinds of events? and (3) Do major life changes and events influence SWB significantly over and above the influence of personality? Our results suggest (1) SWB is a stable construct, (2) extraversion and neuroticism do predispose individuals to experience either more positive or negative events, and (3) life change does not influence long-term life satisfaction.

A Longitudinal Analysis of Personality,
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Within current subjective well-being research, substantial uncertainty exists concerning the relationship between life events, personality, and life satisfaction. Traditionally, life events have been placed in an etiological role in relation to changes in well-being (e.g., Monroe, 1983; Nelson & Cohen, 1983). More recently, researchers have indicated certain individuals may be more likely to experience positive or negative events due to preexisting well-being levels or personality traits (e.g., Fergusson & Horwood, 1987; Headey & Wearing, 1989; Ormel & Schaufeli, 1991; Swearingen & Cohen, 1985). The implications of this research for both the conceptualization of SWB as either a predominantly top-down or bottom-up process (Diener, 1984) and various models of well-being (e.g., Costa & McCrae, 1980; Headey & Wearing, 1989) are substantial. Several criticisms of the majority of life events research-- including the reliance on self-report measures and the use of cross-sectional or one-time studies--have been noted (e.g., Dohrenwend & Shrout, 1985; Johnson, 1986; Schroeder & Costa, 1984). This study improves upon past research in several important ways, utilizing a longitudinal design and using nonself-report measures in addition to self-report data.

When considering the discrepant results being reported concerning life events' relation to SWB, it must be kept in mind

that much of the life events research has been criticized on several grounds (see Johnson, 1986; Rowlison, 1989 for reviews), including the use of checklists that are confounded with dependent measures (Brett et al., 1991; Hudgens, 1974; Schroeder & Costa, 1984), the use of cross-sectional and correlational analyses (and thus lack of causal evidence), and the reliance on strictly self-report data (Rowlison, 1989). The issue of causality alone is a continuing thorn in the side of researchers examining this issue. In the few prospective studies that have been conducted in this area, some have held up the assumption that life events precede stress and dysfunction (e.g., Monroe, 1983; Nelson & Cohen, 1983), whereas others have not (e.g., Cohen, Burt, & Bjorck, 1987; Costa et al., 1987).

Given this state of affairs, if researchers are to move forward in this line of SWB research, it seems paramount to address two main issues: the conduct of more reliable, valid life events studies to establish their relationship to SWB, and the formulation of a model of happiness that integrates life events and personality traits in its conceptualization of SWB. Headey and Wearing (1989), using data from four waves of an Australian panel study, offer one of the most recent models of life satisfaction that addresses these two issues. The study presented here is designed, in part, to test the findings of Headey and Wearing using a more stringent method and to provide consensual evidence for their model of well-being.

Their model--a dynamic equilibrium model--stipulates that people maintain a "normal" equilibrium level of life events and SWB, which can be predicted by age and personality, and that a person's SWB level will change only when the events that person experiences deviate from this equilibrium level. That is, experiencing unusually favorable or adverse events will temporarily alter one's SWB; otherwise, stable personality traits keep a person at his or her "normal" level of SWB. The data that contributed to Headey and Wearing's proposal of a dynamic equilibrium model of happiness include three main results. First, these researchers reported moderate stability in SWB and life events levels and extreme stability in the personality traits extraversion (E), neuroticism (N), and openness to experience (O) over a six year period. Second, Headey and Wearing found that these stable personality traits predispose their participants to experience certain levels of positive and negative life events and moderately stable levels of SWB. Finally, these data demonstrated that life events can influence SWB over and above the influence of personality.

The aim of this longitudinal study is to improve upon earlier studies' (e.g., Costa et al., 1987; Headey & Wearing, 1989) measurement of the relationship between life events, personality, and SWB and to provide convergent validity of Headey and Wearing's (1989) preliminary results. The current study improves upon earlier research in several important ways:

(1) Nonself-report data in addition to self-report data of SWB were employed, and multiple well-being and life events measures were administered to demonstrate construct validity and reduce response artifacts and error of measurement. (2) The longitudinal nature of this design allows for a more stringent test of causality regarding the interaction between personality, life events, and SWB; (3) This particular sample of participants (graduated college students) has been in a transitional period of life--entering graduate school, marrying, finding employment, etcetera; this raises the base rates of change and life events these people experienced during the study, which in turn enhances our ability to examine the effects of life change on well-being; (4) The checklist constructed for this study consists of several events that may be identified and analyzed within separate categories (positive or negative, objective or subjective, controllable or uncontrollable); the importance of this is that we are providing a test of the relation between SWB, personality, and life events using an adequate sample of objective events in the analysis, which has not been done in the past.

The main goal of this study is to conduct a reliable and valid assessment of the relationship between life change, personality, and life satisfaction. Within that goal, we first hypothesize personality and SWB to be fairly stable over time (Costa & McCrae, 1980; 1984). The demonstration of SWB as being

a long-term, measurable entity is of particular interest to those engaged in the current controversy over this issue (e.g., Diener, 1989; Schwarz & Clore, 1989). Second, following from Headey and Wearing (1989), we hypothesize this stability in personality traits (extraversion, neuroticism, and openness) will predispose participants to experience certain types of events. Finally, contrary to Costa, McCrae, and Zonderman's (1987) results--but in line with the dynamic equilibrium model of happiness --we hypothesize major life changes will influence SWB over and above the effects of personality.

Method

Subjects

Data at Time 1 were collected from 136 University of Illinois students (85 females and 51 males) enrolled in a semester long course on mood and well-being during the fall semester of 1986. Throughout the semester, participants completed a number of self-report questionnaires and inventories, collected peer reports, and completed both daily and momentary mood reports. Six individuals (five males and one female) were excluded from the data set, prior to analysis, due to missing or suspect data.

In fall of 1990, 128 of the 130 participants were located and 97 individuals (74%) responded to a mailed questionnaire. The questionnaire included several open-ended questions regarding life changes and events, an 88-item life events checklist, a

current mood measure, satisfaction and comparison ratings of several domains, happiness and life satisfaction measures, and three informant reports. Participants were paid \$15 (informants were paid \$5) for their help at Time 2 and were mailed results from the 1986 data they provided and a debriefing for the current study. The follow-up sample consisted of 62 females and 35 males. Seventeen percent became married or engaged since the first study; 66% became employed, 5% were unemployed, and 29% were still students at Time 2. Measures

Subjective well-being. To assess life satisfaction at Time 1, the Satisfaction With Life Scale (SWLS) (Diener, Emmons, Larson, & Griffin, 1985) was administered on three occasions. The SWLS consists of five items and is constructed to measure global life satisfaction. It has been demonstrated to have good convergence with other self-report measures of happiness (Diener et al., 1985) and has shown solid convergence with nonself-report indices as well (Pavot, Diener, Colvin, & Sandvik, 1991). The two month test-retest correlation coefficient for the SWLS is .85 (Diener et al., 1985). A second, commonly used measure of global SWB--the Fordyce Global Happiness Scale (Fordyce, 1977)--was also completed by participants at three different times. This single item measure simply asks the respondent to report their average level of happiness using an 11-point scale (0 = extremely unhappy, 10 = extremely happy). The Andrews and Withey

Delighted-Terrible Scale (Andrews & Witney, 1976) was a third traditional measure used to assess happiness.

In addition to the SWLS, Fordyce, and Delighted-Terrible measures, three other nontraditional measures of happiness were obtained at Time 1 to better assess participants' long term well-being. First, participants completed an in-depth written interview concerning the affective nature of their lives. These interviews were read and rated for levels of happiness on a 1-7 scale by an expert rater. The reliability of these ratings was assessed using a second rater on a subset of interviews ($N = 35$); the outcome demonstrated a good level of agreement, $r = .68$.

Second, participants completed a memory task in which they were asked to recall as many positive and negative events in their life as possible. The difference between the number of positive and negative events remembered was used to index global happiness (see Diener, Sandvik, Pavot, & Gallagher, 1991; Pavot, Diener, & Fujita, 1989; Seidlitz & Diener, 1991), for complete discussions of this method).

Finally, in order to assess positive and negative affect of subjects, random-moment mood reports in which participants completed a report of their mood when a wristwatch beeper sounded off at random times during the day were obtained. The mood report consisted of 18 adjectives that reflect either positive (e.g., "Happy", "Pleased", "Joyful") or negative states (e.g., "Unhappy", "Anxious", "Depressed/Blue"), and participants

indicated how much of each adjective they were experiencing at the moment. Participants completed a total of 28 moment reports over a two-week period. Daily reports of positive and negative affect (for 42 days) were also obtained using the list of 18 adjectives described above. Participants were asked the degree to which they had experienced each emotion that day on a scale from zero to six (0 = Not at all, 6 = Extremely). The sum of the

positive adjectives provided a measure of positive affect (PA) and the summed negative adjectives provided a measure of negative affect (NA)

In addition to self-report data, extensive nonself-report data were obtained from at least seven informants for each participant (at least three reports were obtained from family members and three others from friends). Informant reports included the SWLS and the Fordyce Scale.

At Time 2, participants completed the SWLS, the Fordyce Scale, domain satisfaction ratings, and an adjective list in which participants indicated the percentage of time they felt various emotions (e.g., Happiness, Contentment, Sadness). Nonself-report data included an average of two informant reports on the SWLS, the Fordyce Scale, and various domain satisfactions.

Personality. To assess personality at Time 1, the NEO Personality Inventory (Costa & McCrae, 1985) was administered. This measure contains scales on five personality dimensions:

extraversion, neuroticism, openness to experience, conscientiousness, and agreeableness. At follow-up, due to time and space constraints, the NEO was factor-analyzed to yield scales consisting of 12 items loading highly (above .53) on the extraversion scale and six items loading highly (above .62) on the neuroticism scale.

Life change. Participants were asked to indicate events they had experienced on a life events checklist constructed for this particular study. Items were taken from the List of Recent Events (Henderson, Byrne, & Duncan-Jones, 1981), the Social Readjustment Rating Scale (Holmes & Rahe, 1967), and the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978). A unique checklist was constructed for this study to maximize base rates of responses for this particular sample (college graduates, age 22-26) and to include a somewhat balanced distribution of positive and negative, objective and subjective, and controllable and uncontrollable events. In consideration of previous research (e.g., Headey & Wearing, 1989; Schroeder & Costa, 1984), favorable events were scored as 1 and adverse events were scored as -1.

Results

In order to create more valid measures of general happiness, principal components analyses were conducted on separate well-being indices. The clinical interview ratings, memory measure of happiness, and daily PA scores were factor analyzed, yielding a

single component (we will refer to this component score as "T₁Happiness"). The SWLS, the informant SWLS, the Fordyce, and the informant Fordyce were similarly combined to yield a single factor-- "T₁SWB" . A single factor emerged from these same measures at Time 2--"T₂SWB".

Insert Table 1 about here

As illustrated in Table 1, the SWLS, the Fordyce, the SWB component score, and the NEO E and N measures all show a great deal of stability over four years --similar to the stability reported by Headey and Wearing (1989).

Insert Table 2 about here

A more interesting picture of SWB's stability emerges in Table 2. Four year correlations of a variety of SWB measures (including unrelated and nonself-report measures) are extremely robust, suggesting the existence of a stable, long-term construct of SWB in participants. For example, T₁SWB and T₂SWB factor scores correlate .69; unrelated measures, such as the T₁Happiness factor score and the T₂SWB factor score correlate .59; and informant reports on the SWLS from Time 1 and Time 2 correlate .51.

Next we tested Headey and Wearing's (1989) proposal that extraversion predisposes individuals to experience more positive events, neuroticism predisposes individuals to experience more negative events, and the trait of openness to experience predisposes individuals to experience greater amounts of both positive and negative events. As indicated in Table 3, strong evidence for these hypotheses was obtained. E correlated significantly with subsequent positive events, $r = .28$, $p < .005$, but not with subsequent negative events; N similarly correlated with negative events, $r = .37$, $p < .001$, but not positive events; finally, 0, as expected, correlated significantly with the experience of both positive and negative life events.

Insert Table 3 about here

In order to determine whether these personality traits or current mood were affecting the reporting of life events, objective events were analyzed separately. The correlations (reported in parentheses) remained stable and robust, providing solid convergent evidence for Headey and Wearing's (1989) results.

To this point, we have demonstrated the stability of SWB and personality, and we have illustrated a connection between these stable traits or constructs and subsequent life events. The final step in our analysis is to test our third hypothesis--that

life events influence long-term SWB.

In general, evidence to support our third hypothesis was not obtained. Multiple analyses --using multiple self-report as well as nonself-report well-being measures and using various indices of life change--yielded little evidence that life events impact these measures across time beyond the influence of E, N, and 0. In fact, life events alone seem to have a negligible impact on well-being, as indicated in Table 4. Tables 5 and 6 reports the

Insert Tables 4-6 about here

changes observed in r^2 in two-step regression analyses Time 1 SWB measures being predicted by Time 1 E, N, and 0 and life events. Personality accounts for a substantial amount of variance in these well-being indices, while life events represent little or no variance.

A further test of life events' impact on life satisfaction was conducted in a similar approach to Costa et al.'s (1987), in which retest correlations of the SWLS were compared between various subsamples of "high change" and "low change" groups. Subjects were divided into two groups: those experiencing above the mean number of events reported for the entire sample and those experiencing less than the mean. This division was made on several dimensions--positive, negative, objective, subjective,

controllable and uncontrollable events, and retest correlations were compared between the two subsamples. Tables 7 and 8 report the results of these analyses, which contradict our initial hypothesis and support Costa et al.'s (1987) conclusions. The trend represented in these tables is for

Insert Tables 7 and 8 about here

people who experienced a greater amount of life change to also report a greater amount of stability in the SWLS.

Discussion

The conclusions of the present study contribute to our current understanding of three core issues in the SWB literature. First, with response artifacts and error of measurement greatly reduced, we demonstrated the existence of a long-term, relatively stable construct of SWB. This substantially influences current debates over the structure of life satisfaction, as well as general models of well-being (see Diener, 1984). Second, this study converges with recent reports claiming that personality predisposes people to experiencing certain life events (Fergusson & Horwood, 1987; Headey & Wearing, 1989; Ormel & Schaufeli, 1991). Due to the strong methodology of measuring life change (using objective events) and the particular sample used in this study, researchers may now be more confident of the validity of this relationship. Previous life events research must also be

re-examined in this new light. Finally, it is concluded that life events--as measured with a checklist or open-ended responses--demonstrate no significant effect on SWB over a four year period in this young adult sample. As discussed above, this outcome does not converge with Headey & Wearing's results, but theoretically it may converge with their dynamic equilibrium model of SWB; life events' influence on SWB may only be detectable within one or two years of longitudinal study, and people may return to their equilibrium states within three or four years. However, these data may also simply support the argument several researchers have already made--that life events truly do not influence adult long-term SWB and that personality or other factors (ongoing social stressors, for example) are the main contributors to a person's sense of well-being (Costa & McCrae, 1980; Costa, McCrae, & Zonderman, 1987; Kammann, 1982; Mirowsky & Ross, 1989). Future longitudinal studies examining this relationship over varying time spans will provide a clearer picture of the dynamics involved between these variables.

One important limitation of this study to be mentioned is its generalizability to older and younger samples. Obviously children do not have as crystalized personality traits as adults have and are thus much more susceptible to external influences on their well-being.

Clearly, more questions remain in the area of life events and SWB than are answered in this study. Are there any external conditions or events that account for variance in long-term SWB over and above personality? What specific life events may be predicted from personality and what is the mechanism driving this relationship? Would a more valid approach to assessing life change uncover a relationship between change and SWB? From my perspective, it seems the external conditions of a person's life must at some point interact with SWB. Life events may affect momentary happiness to some extent, but their affect on long-term SWB seems to either be extremely limited or (at most) to be overcome by stable personality traits. What may be required--and what we provide very preliminary findings on here--is simply an improved measure of life change. Aggregating life events from checklists into "positive" and "negative" cells may indeed obfuscate the impact individual events have on SWB. The ongoing stresses that several individual life events (such as divorce, death, and marriage) create and the stresses of ongoing economic and social environments must be accounted for and represented in future models of life change and well-being.

Overall however, the results of this study are extremely encouraging to personality and SWB research. This study provides

important consensual evidence for several earlier studies' results, as well as direction for future research. Another implication this study hopes to have on future research--aside from its empirical results--is in demonstrating a strong and reliable methodology in SWB research: using nonself-report and multiple measures wherever possible and examining the relationship between life change, personality, and SWB longitudinally, in a multimethod approach rather than at a single point in time using a single method. The complex nature of SWB requires researchers to apply such rigorous study designs, and the state of the art in SWB research certainly seems to be moving in this direction. As a consequence, increasingly sophisticated models of SWB are emerging from the field, and the future looks bright for researchers attempting to better understand the causes and consequences of subjective well-being.

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Table 1
Retest Correlations of Subjective Well-Being, Extraversion, and Neuroticism

Measure	1986-1990	Reliability ¹	Estimated ² stability 1986-1990
SWLS	.54	.87	.62
Fordyce	.62	.73	.85
SWB component score	.69	.71	.96
Extraversion	.72	.80	.90
Neuroticism	.53	.81	.65

¹Cronbach's alpha

²Disattenuated retest correlations

Table 2
Stability of Subjective Well-Being: Pearson Correlations

Measure (1986)	Measure (1990)					
	SWLS	Peer SWLS	Fordyce	Peer Fordyce	T ₂ SWB	Domain Satis
SWLS	.58	.52	.55	.47	.66	.48
Peer SWLS	.40	.51	.43	.43	.53	.32
Fordyce	.55	.52	.67	.47	.68	.45
Peer Fordyce	.34	.45	.37	.38	.44	.32
T1SWB	.53	.60	.63	.52	.69	.46
D-T Scale	-.52	-.53	-.51	-.44	-.62	-.50
Clinical Interview	.46	.44	.45	.41	.50	.31
Memory	.40	.27*	.40	.16*	.34	.27
T1Happiness	.53	.47	.57	.41	.59	.42

*Not significant at the .05 level.

Note: The SWLS and Fordyce were administered on three occasions during the fall 1986 data collection; correlations are based on the average of these three scores.

Table 3
 Personality and Subsequent Life Events: Pearson Correlations

Measure (1986)	Positive events (1986-1990)		Negative events (1986-1990)		Event balance (1986-1990)	
Life Satis.	.01	(.13)	-.26**	(-.17)	.28***	(.26***)
SWB factor	.14	(.21*)	-.19*	(-.11)	.31***	(.28**)
Extrav	.28***	(.35****)	-.05	(.05)	.32***	(.27**)
Neurot	.06	(-.08)	.37****	(.31***)	-.29***	(.32****)
Openness	.28***	(.19*)	.29***	(.20*)	-.01	(.003)

Note: Coefficients for objective events are in parentheses.

****p < .001 ***p < .005 **p < .01 *p < .05

Table 4
Multiple Regressions with SWLS₉₀ Predicted by SWLS₈₆ and
Life Events

Variable	F	Multi-R	R ²	Change
Dependent variable = SWLS ₉₀				
SWLS86	38.89	.56	.31	.32
Event balance	23.72	.61	.37	.05

Objective Event balance	19.63	.57	.32	.005

Note: F-test is test for significance of increment in R.
Objective event balance was analyzed separately.

Table 5
 Multiple Regressions with Time 2 SWLS₉₀ Predicted by Time 1
 Personality (E, N, & O) and Life Events

Variable	F	Multi-R	R ²	Change
Dependent variable= SWLS ₉₀				
Personality86	8.30	.49	.24	.24
Positive events	6.73	.51	.26	.02

Objective				
Positive events	6.39	.50	.25	.007

Personality86	8.30	.49	.24	.24
Negative events	6.21	.49	.24	.002

Objective				
Negative events	6.46	.50	.25	.009

Note: F-test is test for significance of increment in R.
 Objective negative events were analyzed separately.

Table 6
 Multiple Regressions with Time 2 T₂SWB Predicted by Time 1
 Personality (E, N, & O) and Life Events

Variable	F	Multi-R	R ²	Change
Dependent variable= T ₂ SWB				
Personality ₈₆	7.41	.52	.27	.27
Positive events	5.47	.52	.27	.0002

Objective				
Positive events	5.46	.52	.27	.0000

Personality ₈₆	7.41	.52	.27	.27
Negative events	6.01	.54	.29	.02

Objective				
Negative events	5.47	.52	.27	.0004

Note: F-test is test for significance of increment in R.
 Objective events were analyzed separately.

Table 7
Life Events and Life Satisfaction Stability: Retest Correlations
of the SWLS

Life change (Event checklist)	SWLS ₈₆ -SWLS ₉₀ (<u>n</u>)	
Positive events (X=13.6)		
> X	.58	(44)
< X	.50	(45)
Negative events (X=9.6)		
> X	.65	(42)
< X	.35	(47)
Total events (X=23.2)		
> X	.60	(41)
< X	.48	(48)
Controllable		
positive events (X=9.4)		
> X	.54	(38)
< X	.53	(53)
Uncontrollable		
positive events (X=1.4)		
> X	.34	(35)
< X	.60	(54)
Controllable		
negative events (X=2.4)		
> X	.46	(39)
< X	.61	(50)
Uncontrollable		
negative events (X=2.9)		
> X	.73	(43)
< X	.46	(46)
Total controllable		
events (X=11.8)		
> X	.64	(43)
< X	.43	(46)
Total uncontrollable		
events (X=4.4)		
> X	.69	(34)
< X	.49	(55)

Note: X = Mean

Table 8
Objective Life Events and Life Satisfaction Stability: Retest
Correlations of the SWLS

Objective life change (Event checklist)	SWLS ₈₆ - SWLS ₉₀ (<u>n</u>)	
Positive		
objective events (X=8.3)		
> X	.54	(40)
< X	.53	(49)
Negative		
objective events (X=4.8)		
> X	.63	(44)
< X	.38	(45)
Total objective		
events (X=13.1)		
> X	.51	(40)
< X	.51	(46)

Note: X = Mean