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Influence of Extraversion and Neuroticism on Subjective Well-Being: Happy and Unhappy People

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Three studies are reported that examine the relations between personality and happiness or subjective well-being. It is argued that (a) one set of traits influences positive affect or satisfaction, whereas a different set of traits influences negative affect or dissatisfaction; (b) the former set of traits can be viewed as components of extraversion, and the latter as components of neuroticism; and (c) personality differences antedate and predict differences in happiness over a period of 10 years, thus ruling out the rival hypothesis that temporary moods or states account for the observed relations. A model of individual differences in happiness is presented, and the separate and complementary roles of trait and adaptation-level theories in explaining happiness are discussed.

Nowhere is the relevance of psychology to human concern more evident than in studies of happiness or subjective well-being. Interest in measuring the quality of life has lead researchers (Andrews & Withey, 1976; Bradburn & Caplovitz, 1965; Campbell, Converse, & Rodgers, 1976; Cantril, 1965) to conduct national surveys of happiness and to examine the influence of social-structural or demographic variables on perceived well-being. Adaptation-level (AL) theory (Helson, 1964) has been applied to explain individual perceptions of happiness (Brickman & Campbell, 1971; Brickman, Coates, & Janoff-Bulman, 1978). As a result of these studies, a number of issues have been clarified and a few unexpected findings replicated. The present article is an attempt to summarize the state of current knowledge on personality and happiness and to offer a model of happiness that clarifies and extends it. Data are provided in support of several parts of the model.

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Conceptualizing and Measuring Happiness

Researchers have used a variety of measures that indicate something of the nature and diversity of conceptions of subjective well-being. Gurin, Veroff, and Feld (1960) adopted the most straightforward and intuitive method of assessing happiness: They asked subjects if they were "very happy," "pretty happy," or "not too happy." To obtain a more differentiated estimate of life satisfaction, Campbell, Converse, and Rodgers (1976) required subjects to rate their satisfaction within each of 10 areas of life—job, marriage, family, and so on. Campbell (1976) regarded this strategy as a "cognitive" appraisal of life satisfaction, since it avoided any direct reference to feelings or affects and allowed the subject to assess his or her satisfaction according to his or her own standards and expectations.

Cantril (1965) used a so-called self-anchoring scale, in which individuals defined a "best life" and a "worst life" for themselves, and then rated their present life on this best-to-worst scale. A different approach that has attained considerable use by researchers was developed by Bradburn and his colleagues at

the National Opinion Research Center (Bradburn, 1969; Bradburn & Caplovitz, 1965). Instead of asking for cognitive judgments of the adequacy of one's life, he measured feelings or affects. Following the old idea that happiness is the sum of pleasures minus pains, Bradburn developed an Affect Balance Scale by subtracting negative affects (boredom, loneliness, depression) experienced during the past two weeks from positive affects (pride, excitement, pleasure).

Despite the variety of approaches used to this point, the scope and limits of the domain of measures relevant to subjective well-being or happiness have not yet been established. In particular, scales originated in clinical contexts to measure dysphoric affect, hopelessness, or insecurity may measure what we recognize within normal limits to be simple unhappiness. The phrase "psychological well-being" itself carries with it the connotation of mental health and has been so interpreted by many researchers (e.g., Moriwaki, 1974; Robinson, 1969).

This array of alternative operationalizations of happiness would be almost unmanageable were it not for one happy circumstance: The scales all show reasonably high intercorrelations. Bradburn (1969) found that the Negative Affect Scale (NAS), the Positive Affect Scale (PAS), and especially the Affect Balance Scale (ABS) scores correlated significantly with avowals of "very happy," "pretty happy," or "not too happy." Campbell (1976), in a national probability sample, showed that his index containing judgments of life satisfaction in several areas of life correlated highly ($r = .57$) with an index of general affect based on semantic differential ratings of life on such scales as interesting–boring and enjoyable–miserable.

Moriwaki (1974) demonstrated the close kinship of morale scales to the subjective well-being domain when she reported a correlation of .61 between the ABS and the Rosow Morale Scale in a small sample of elderly persons. And in the most comprehensive study of the subject, Andrews and Withey (1976) correlated 68 measures and indices of happiness (including the Gurin, Cantril, and Bradburn scales) in five national probability samples. They concluded that measures "involving a general evaluation of the respondents' life-as-a-whole from an absolute perspective tend to cluster together. . . . Measures that tap life-as-a-whole less generally . . . show positive relationships of varying strength to the core cluster" (Andrews & Withey, 1976, p. 76).

In marked contrast to the apparent ease of measurement in the domain of subjective well-being are the conceptual enigmas that have emerged in the course of research. The first of these is the meager relation between objective and subjective indicators of happiness or well-being. Common sense suggests that wealth, youth, and social privilege should contribute substantially to happiness, and much research has been devoted to an investigation of this hypothesis. Yet Campbell (1976) reports that only 17% of life satisfaction is predictable from *10* demographic indicators in a national probability sample. Similarly, Andrews and Withey (1976), also using national probability samples, account for only 8% of the variance in life satisfaction using age, family cycle stage, family income, education, race, and sex as predictors, either singly or in combination. An even more dramatic instance of the apparent irrelevance of objective circumstances to subjective well-being is provided by Brickman, Coates, and Janoff-Bulman (1978), who report that lottery winners were no happier than controls on present and estimated future happiness. Paraplegics, although somewhat less happy than controls, did not differ from lottery winners or controls in estimation of future happiness.

The second problem is a paradox that has never been fully explained. In 1969, Bradburn reported that when positive and negative affects are independently measured, the items form two independent clusters. Although *positive* and *negative* carry the strong mathematical suggestion of being opposite, Bradburn's PAS and NAS were not opposite (negatively correlated) but independent, virtually uncorrelated. Despite this, both positive and negative affects were found to be associated with overall estimates of happiness. Using a slight modification of the three Bradburn scales, Lowenthal, Thurner, and Chiriboga (1975) confirmed that positive and negative affect were independent predictors of

global happiness. Similarly, Costa and McCrae (Note 1) found a median correlation of only −.11 between PAS and NAS across four administrations. Andrews and Withey (1976) also replicated the finding, using both the three Bradburn scales and "cognitive" items that required respondents to assess the "good" and "bad" aspects of their life separately. It is not surprising that pleasant emotions enhance life satisfaction or that unpleasant emotions diminish it, but the repeated observation that the pleasantness and unpleasantness of one's life are uncorrelated is a puzzling phenomenon the explanation for which is of considerable theoretical importance.

Personality Correlates of Subjective Well-Being

Personality descriptions of happy persons generally resemble descriptions of psychological and social adjustment. Smith (1961), for example, lists as correlates of happiness: optimism, warmth, emotional stability, sociability, and self-insight. Wessman and Ricks (1966), in their intensive study of a small sample of Harvard and Radcliffe students, point to large negative correlations with the Minnesota Multiphasic Personality Inventory *D* scale and the 16 Personality Factor (PF) O or "guilt-prone" scale in justifying their conclusion that characteristically happier people are well-adjusted, high in ego strength, and high in self-esteem, as well as being socially involved.

Wilson (1967), in his studies, found social and family adjustment and self–ideal congruence to be important correlates of happiness and concluded his review of the literature by asserting that "happiness is consistently related to successful involvement with people" (p. 304). At the unhappy pole, a number of investigators have found signs of psychopathology or neuroticism among unhappy people. Veroff, Feld, and Gurin (1962) reported worry, anxiety, and psychosomatic concerns among the correlates of unhappiness, as did Bradburn and Caplovitz (1965). Finally, self-rated health has also recurred as an important predictor of subjective well-being (Palmore & Kivett, 1977; Wolk & Telleen, 1976).

The prominence of the Bradburn scales has begun to encourage investigators to look for personality correlates of positive and negative affect separately, and some revealing trends have begun to emerge. Moriwaki (1974) reported that a nine-item mental health scale was significantly related to NAS but not to PAS. Beiser (1974) found that reports of psychophysiological disorders were associated with a negative affect factor but not with a positive affect factor in his instruments. On the other hand, role planning and social participation were associated with positive but not negative affect factors. Recently, Bradburn (Note 2) has pointed out a similar trend in his data. He reports that positive affect exclusively is related to social interest, sociability, and activity and that negative affect only is associated with psychosomatic symptoms, anxiety, poor role adjustment, and worries.

These findings suggest a hypothesis that may explain the independence of positive and negative affect and meaningfully organize the body of evidence on personality and happiness. It is hypothesized that one set of dispositions is responsible for positive affect or satisfaction, whereas another, independent set of dispositions influences negative affect or dissatisfaction.

In Study 1 the relation between four measures of happiness and seven personality dispositions hypothesized to be related to positive or negative affect is examined. In Study 2 an attempt is made to clarify and organize the results by testing the original hypothesis using measures of the broader dimensions of extraversion (E) and neuroticism (N). Finally, in Study 3 happiness is predicted from E and N data obtained 10 years previously.

Study 1

From the large number of traits with reported associations to subjective well-being, some emerge as more likely to be associated uniquely with one side or the other of the affect balance formula. Some of the specific facets of temperament articulated by Buss and Plomin (1975) fall into this category. Buss and Plomin trace negative affects (par-

ticularly fear and anger) to strength of emotional drive, and they speculate that "If there is temperamental input into individual differences in *positive* emotions, it is likely to be activity (for elation) or sociability (for friendliness and warmth)" (p. 57). Some evidence supporting this idea is offered in terms of daily level of mood ratings, and the division of traits agrees generally with Bradburn's (Note 2) observations. Study 1 tests the hypothesis that the temperamental traits of emotionality, fearfulness, hostility, and impulsivity will be associated with lower levels of happiness and especially with high negative affect, and that temperamental traits of sociability and activity will be associated with higher levels of happiness and, particularly, with positive affect.

Method

Subjects. The data reported were collected as part of a project on smoking and personality conducted in collaboration with the Normative Aging Study, an interdisciplinary longitudinal study of health and aging in men (Bell, Rose, & Damon, 1972). Participants, volunteers screened for health and geographical stability, ranged in age from 35 to 85 at the time of this research. The sample consists largely of white veterans, with all but the lowest socioeconomic groups well represented. A subsample of 1,100 men was contacted by mail and was asked to complete a series of four questionnaires mailed at intervals of 3 months in 1976. Response rates were 79%, 82%, 73%, and 54% for the four mailings. Additional information was obtained on a subsample of 172 subjects visiting the study center for regular medical examinations during the data collection period. Results are based on all available cases, with specific *n*s given in each table.

Measures. Four measures of happiness were collected. The principal measure was Bradburn's (1969) scales, which yielded scores for PAS, NAS, and the difference of these scores, ABS. The Bradburn measures were obtained at each of the four quarterly mailings. An ABS sum score was calculated by summing the ABS scores over the four administrations.

The Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974) was given in the third questionnaire mailing. The scale was developed to assess hopelessness or pessimism in clinical populations. In a sample of 294 hospitalized patients, internal consistency was found to be .93. Correlations with clinicians' ratings of hopelessness ranged from .62 to .74. Little evidence of the test's applicability to nonpsychiatric populations has yet been provided.

The Personal Security Inventory (Knutson, 1952) was designed to measure personal security as the subjective evaluation of ". . . success, satisfaction, and surety or confidence" (p. 24) in a number of areas of life. Knutson reports validation studies in which psychiatric patients scored significantly lower than normals; personal security was also found to be positively related to occupational status. A shortened, 16-item form of the Personal Security Inventory was given as part of the fourth mailing.

Those subjects who came to the study for medical examinations during the data collection period were asked to complete the Life Satisfaction Index. For each of nine areas (work, health, money, appearance, self-respect, getting along with others, love, sex, and religious faith) subjects rated their satisfaction on a 5-point scale. Internal consistency (coefficient alpha) for the summed score was .84 in our sample of 172.

Scales from the EASI-III Temperament Survey (Emotionality/Activity/Sociability/Impulsivity; Buss & Plomin, 1975) were included in the second mailing. Each scale consists of five items and was developed through factor analysis and rating validation. Two- to three-month test–retest reliabilities averaged .79 in a sample of 32 women; self-reports correlated .51 on the average with spouse ratings in a sample of 137 couples. Scales hypothesized to relate to NAS included general emotionality, fear, anger, and poor inhibition of impulse; scales hypothesized to relate to PAS included sociability, tempo, and vigor.

Analyses. Pearson correlations among the four happiness measures were used to examine evidence for convergent validity. Correlations were then computed between happiness and temperament measures. Finally, correlations between temperaments and the components of ABS were calculated for each of the four time points to examine the hypothesized relations of the measured traits to PAS and NAS over four replications.

Results and Discussion

Correlations between the three Bradburn scales and the alternative happiness measures at four times follow the pattern reported in the literature: PAS and NAS scores are significantly related to happiness measures in 23 of 24 cases, but in every case ABS is more highly correlated with the Beck scale, the Knutson inventory, and the index than either of its components is. Of the Bradburn scales, the ABS thus appears to measure happiness best.

Table 1 presents the intercorrelations of the ABS Sum and the three other happiness measures and suggests that different strategies or instruments for measuring subjective well-being produce similar results. All correlations are significant and are generally high enough to suggest convergent validity for the mea-

Table 1
Intercorrelations of Happiness Measures

Measure	1	2	3	4
1. ABS sum	—	.64**	.61**	.40**
2. Personal security	524	—	.59**	.32**
3. Hopelessness[a]	529	552	—	.18*
4. Life Satisfaction Index	82	93	135	—

Note. *ns* are given below the diagonal. ABS = Affect Balance Scale.
[a] Scale reflected to "hopefulness."
* $p < .05$. ** $p < .001$.

sures. The Life Satisfaction Index appears to be a weaker indicator of happiness in this group, but Campbell's (1976) correlation of .57 between a similar index and a happiness measure strengthens the argument for treating the index as a measure of happiness.

The temperamental correlates of happiness, shown in Table 2, are also consistent with the literature. Happiness is positively associated with sociability and activity and negatively associated with emotionality and impulsivity.

All of the 28 correlations are in the predicted direction, and 27 of them are statistically significant. The median correlation is .24, a value that compares favorably with *multiple* correlations of .41 (Campbell, Converse, & Rodgers, 1976) or .28 (Andrews & Withey, 1976) reported by survey researchers when demographic characteristics are used to predict life satisfaction.

The hypothesis that the scales of general emotionality, fear, anger, and poor inhibition of impulse influence primarily negative affect, whereas sociability, tempo, and vigor scales will influence primarily positive affect, is tested in Table 3.

For three of the temperament scales—general emotionality, anger, and poor inhibition of impulse—it is clear that only the negative side of affect balance is substantially related. In each case, correlations with NAS are higher than with the corresponding ABS score. The pattern for the fear scale is not so clear: At each time, fear is more closely related to NAS than to PAS, but it does show a consistent effect on lowering PAS as well.

Similarly, two of the positive temperament scales—tempo and vigor—are associated with PAS but not with NAS, as predicted. Sociability is more closely related to PAS than to NAS, as predicted, but it also appears to have a consistent effect on NAS.

Thus five of the seven scales appear to influence happiness by their impact on only one side of the affect balance equation. Two others show their primary effect on the hypothesized affect component but also show some influence on the other as well.

Study 2

The hypothesis that some traits influence positive affect and some influence negative affect was generally supported by the results of Study 1. It is possible to take these results one step further by noting that these traits have an internal organization and coherence. To those familiar with factor models of personality, the list of traits provided by Study 1 (and much previous research) begins to take the shape of two established dimensions of personality: extraversion (E) and neuroti-

Table 2
Correlations of Temperament Scales With Happiness Measures

Measure	General emotionality	Fear	Anger	Poor inhibition of impulse	Sociability	Tempo	Vigor
ABS sum (529)	−.33***	−.40***	−.21***	−.22***	.32***	.13**	.28***
Hopelessness[a] (757)	−.33***	−.41***	−.19***	−.23***	.25***	.09**	.18***
Personal security (563)	−.25***	−.40***	−.09*	−.16***	.32***	.12**	.28***
Life Satisfaction Index (149)	−.21**	−.32***	−.12	−.15*	.24***	.21**	.32***

Note. *ns* are given in parentheses. ABS = Affect Balance Scale.
[a] Scale reflected to "hopefulness."
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Correlations of Temperament Scales With Bradburn Scales at Four Times

Time	*n*	General emotionality	Fear	Anger	Poor inhibition of impulse	Sociability	Tempo	Vigor
				Positive Affect Scale				
1	823	−.07**	−.18***	−.00	−.03	.23***	.17***	.23***
2	903	−.06*	−.20***	−.02	−.06*	.24***	.21***	.24***
3	757	−.13***	−.22***	−.02	−.08*	.24***	.14***	.23***
4	566	−.05	−.17***	.00	−.04	.22***	.19***	.29***
				Negative Affect Scale				
1	823	.30***	.26***	.24***	.21***	−.13***	.05	−.06*
2	903	.38***	.34***	.26***	.28***	−.20***	.05	−.06*
3	757	.34***	.28***	.21***	.22***	−.20***	.02	−.06
4	566	.32***	.33***	.20***	.24***	−.13***	.04	−.08*
				Affect Balance Scale				
1	823	−.25***	−.29***	−.17***	−.16***	.24***	.08*	.19***
2	903	−.29***	−.36***	−.18***	−.23***	.29***	.10***	.20***
3	757	−.28***	−.31***	−.14***	−.18***	.28***	.08*	.18***
4	566	−.23***	−.32***	−.12***	−.18***	.23***	.10**	.24***

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

cism (N). And indeed, factor analyses (Costa & McCrae, in press) showed that the EASI-III scales of general emotionality, fear, anger, and poor inhibition of impulse defined an N factor, whereas sociability, tempo, and vigor formed part of an E factor. It is now possible to propose a model of the relations between personality and happiness. Extraversion, together with its component traits of sociability, tempo, and vigor, predisposes individuals toward positive affect, whereas neuroticism (and hence general emotionality, impulsivity, fear, and anger) predisposes individuals toward negative affect. The simplest test of the model is direct correlation of measures of E and N with happiness measures.

Method

Subjects. Study 2 employed the same sample and procedures as Study 1.

Measures. Two measures of N and E were administered to the subjects by mail, as in Study 1. Cluster analysis of the Cattell Sixteen Personality Factor Questionnaire (16 PF) scales (Costa & McCrae, 1976) had shown an anxiety or N cluster and an E cluster that closely resembled the major second-order factors reported for the 16 PF (Cattell, Eber, & Tatsuoka, 1970). Multiple regression was used to identify the 15 items in Form A that best predicted full N and E scores in a sample of 969 men. These 30 items were used as short-form N and E cluster scales and were included in the third mailing. Additionally, the standard Form A of the Eysenck Personality Inventory (EPI: Eysenck & Eysenck, 1964) was included in the fourth mailing. The theoretically independent dimensions of E and N were empirically uncorrelated in the present sample ($r = .00$, $n = 808$ for short-form 16 PF scales; $r = -.02$, $n = 576$ for EPI scales). Evidence of convergent validity is seen in the correlation of .65 ($n = 549$) between the 16 PF and EPI E measures and .68 ($n = 553$) between the two N measures.

Results and Discussion

Table 4 shows the Pearson correlations of E and N measures with the Bradburn scales at four times, 3 months apart.

In all eight (Time × Measures) cases, neuroticism or anxiety is more strongly correlated with NAS than with either PAS or ABS. In all eight cases, extraversion is more strongly correlated with PAS than with NAS or, in six of the eight cases, than with ABS.

When E and N measures are correlated with the three alternative operationalizations of happiness—hopelessness, personal security, and the Life Satisfaction Index—11 of the 12 correlations are statistically significant, and

Table 4
Correlations of 16 PF and EPI Scales With Bradburn Scales at Four Times

Time	16 PF Short-Form scales			EPI scales		
	N	E	*n*	N	E	*n*
			Positive Affect Scale			
1	−.11***	.16***	753	−.11**	.16***	554
2	−.06	.22***	757	−.08**	.21***	559
3	−.16***	.19***	808	−.17***	.17***	549
4	−.10**	.25***	556	−.15***	.27***	575
			Negative Affect Scale			
1	.29***	−.03	753	.35***	−.01	554
2	.41***	−.04	757	.38***	−.01	559
3	.40***	−.13***	808	.39***	−.05	549
4	.34***	−.12**	556	.43***	−.07*	575
			Affect Balance Scale			
1	−.27***	.12***	753	−.31***	.11**	575
2	−.31***	.17***	757	−.32***	.15***	559
3	−.34***	.20***	808	−.34***	.15**	549
4	−.27***	.25***	556	−.39***	.22***	575

Note. PF = Cattell Sixteen Personality Factor Questionnaire. EPI = Eysenck Personality Inventory. N = neuroticism. E = extraversion.
* $p < .05$. ** $p < .01$. *** $p < .001$.

all are in the predicted direction. Thus, E and N not only influence the experience of positive or negative affect; they also show consistent correlations with measures of happiness that do not depend on direct reports of affective experience.

Most factorial-based trait systems recognize N and E as the broadest and most pervasive dimensions of personality. Eysenck (Eysenck & Eysenck, 1969) has devoted most of his research to an investigation of these two dimensions directly. Cattell (1973) sees them as second-order traits and has attempted to measure the more molecular, first-order aspects of personality that form them. Guilford (1976) prefers to call the E cluster *social activity* and the N cluster *emotional health,* but the similarity of these schemes is beyond question. The bulk of the literature on the personality correlates of happiness can be summarized by saying that more extraverted and more adjusted people are happier. The characteristics listed somewhat indiscriminately under the heading of "psychological and social adjustment" can now be broken apart into two discrete groups. Under the heading of E come sociability, warmth, involvement with people, social participation, and activity. Under N come such characteristics as ego strength, guilt proneness, anxiety, psychosomatic concerns, and worry. Extraverted traits contribute to one's positive enjoyment or satisfaction in life, although they do not generally appear to reduce the unpleasantness of adverse circumstances. Neurotic traits predispose one to suffer more acutely from one's misfortunes, but they do not necessarily diminish one's joy or pleasures.

Study 3

Studies 1 and 2 made the causal assumption that personality influenced happiness or subjective well-being—an interpretation that simple correlations cannot themselves sustain. Although it appears unlikely that temporary states of happiness would substantially alter personality, it is plausible to argue that short-term moods or states may affect responses to personality measures. Perhaps an individual in an upbeat mood will respond like an extravert, whereas the person who is temporarily de-

pressed will score high on neuroticism. The long-term stability of E and N (Costa & McCrae, 1977, in press; Moss & Susman, in press) argues against this interpretation, but a more direct test is given by an examination of the predictive relations between personality measures and levels of subjective well-being obtained 10 years later. Over this long a time span, any systematic bias introduced by temporary moods or states should be eliminated. Predictive relations between E, N, and happiness would thus strengthen the contemporaneous evidence for the proposed model.

Method

Subjects. Subjects were a subset of those described in Study 1 who had been given the 16 PF between 1965 and 1967. Data were available for 234 men.

Measures. An N and an E cluster score were obtained from analysis of combined A and B forms of the 16 PF (Costa & McCrae, 1976). (These scores formed the criterion in the selection of items for the short-form 16 PF scales described in Study 2.) These clusters resemble the second-order factors reported by Cattell; evidence for their validity and stability is reported elsewhere (Costa & McCrae, 1977).

Results and Discussion

N cluster scores were significantly related to NAS ($r = .39$, $p < .001$) and to ABS ($r = -.30$, $p < .001$) but not to PAS ($r = -.08$, *ns*). E cluster scores, by contrast, were not related to NAS ($r = .03$, *ns*) but were related to PAS ($r = .23$, $p < .001$) and ABS ($r = .14$, $p < .05$). Knowing an individual's standing on these two personality dimensions allows a prediction of how happy the person will be 10 years later. These data effectively rule out the alternative explanation that associations between happiness and personality result solely from the mediating effect of temporary moods or states. This finding is also impressive as indirect evidence of the enduring effects of these dimensions of personality.

General Discussion

A Model of Happiness

Figure 1 presents a model of happiness that accounts for the correlational data reported here and in the literature.

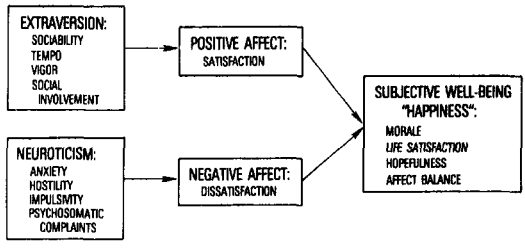

Figure 1. A model of personality influences on positive and negative affect on subjective well-being.

The personality traits found to be correlates of happiness have been grouped under the headings of E and N. The direct outcomes of these dispositions, according to the model, are positive affect and negative affect, respectively. These two components are subjectively "balanced" by the individual to arrive at a net sense of subjective well-being, which may be measured as morale, life satisfaction, hopefulness, or simply happiness.

Although it has been known for some time that positive and negative affect were independent contributions to global happiness, no one has ever provided a fully satisfactory explanation for this phenomenon. It is clear that there must be two independent sources of variation, two sets of causes operating to produce the two independent effects. In his initial attempt at an explanation, Bradburn looked for objective sources. He suggested that the situations that contribute to positive affect are separate from those that contribute to negative affect. It is easy to find examples that support the plausibility of this position. Thus, poor health makes one unhappy, but good health is taken for granted, not seen as a source of positive joy. Conversely, a hobby may bring us considerable pleasure, but few of us have hobbies that carry much potential for pain.

Plausible as the objective sources idea is, it rests more on speculation than on fact. Some of the available facts even contradict it. For example, we might expect that when we ask subjects to rate their level of satisfaction with separate parts of their life—job, marriage, money, religion, and so on—there would be little correlation between them, even though all might contribute to overall happiness. Instead, such items tend to intercorrelate substantially in our own data and that of others

(e.g., Campbell, Converse, & Rodgers, 1976). Regardless of the area of life, people tend to be either satisfied or dissatisfied. The two sources of variation must lie *within* the person, and the dimensions of E and N are prime candidates.

Figure 1 calls attention to the separability of satisfaction from dissatisfaction, a phenomenon somewhat foreign to "common sense" notions of happiness. We tend to assume that these two components are opposites and that more of one means less of the other. The data show that reality is more complex. The difference between common sense and the model is seen most clearly when the traits of E and N are considered in combination. Low N introverts and high N extraverts may have similar levels of life satisfaction or happiness, but they achieve this result in utterly different ways. The former are seldom depressed but just as seldom elated. The latter are prone to both extremes and reach "average" satisfaction only because there is as much satisfaction as dissatisfaction in their lives. In some respects, the two groups are similar, but future studies should also be sensitive to the many differences between individuals who may show the same level of subjective well-being.

Finally, Figure 1 points out a need for conceptual clarification of the relation between happiness and mental health. Many researchers consider the Bradburn scales a measure of mental health, and our finding that the ABS is strongly related to two clinically validated scales—the Beck Hopelessness Scale and the Knutson Personal Security Inventory—might reinforce this notion. If these scales were only associated with N, there would be little reason to object to considering them as measures of adjustment, since N is clearly a conceptual correlate of mental illness. But the happiness scales also reflect E, whose conceptual relation to mental health is by no means unequivocal. The use of happiness scales as criteria of adjustment portrays introverts as less mentally healthy than extraverts; scientific researchers should consider whether they wish to so penalize introverts. The independence of E and N argues that introverts are no more prone to anxiety, depression, or anger than are extraverts. Whether they should be considered lower in mental health simply because they show less zest, vigor, or enthusiasm is a thorny question, conceptual rather than empirical in nature. This caution applies particularly to social gerontologists (Lemon, Bengtson, & Peterson, 1972; Neugarten, Havighurst, & Tobin, 1961) who have used as criteria of adjustment in old-age measures that include "zest" as a component of life satisfaction.

Happiness, Personality, and Adaptation Level

Few would argue against the position that, for normal people, the major determinant of *momentary* happiness is the specific situation in which the individual finds himself or herself. Social slights hurt our feelings, toothaches make us miserable, compliments raise our spirits, eating a good meal leaves us satisfied. The contribution of personality to any one of these feelings is doubtless small. Yet over time, the small but persistent effects of traits emerge as a systematic source of variation in happiness, whereas situational determinants that vary more or less randomly tend to cancel each other out (cf. Epstein, 1977).

On the other hand, the finding that traits predict happiness more successfully than such enduring objective conditions as health, wealth, sex, or race is more problematic. We all believe that we would be happier if we had more vigor, money, or power. Survey research data, however, show that these circumstances have very limited impact on subjective estimates of well-being. Brickman has proposed that adaptation-level theory can account for these facts. Brickman and Campbell (1971) state as the fundamental postulate of AL theory that "the subjective experience of stimulus input is a function not of the absolute level of that input but of the discrepancy between the input and past levels" (p. 287). As applied to happiness, this means that the standards by which people judge the pleasantness or unpleasantness of events or circumstances are not absolute but relative, set and reset by the positive and negative experiences of the individual. According to this view, habituation makes extreme circumstances (like great wealth or great poverty) appear more normal to the individual concerned, who comes to take advantages for granted or learns to

live with misfortunes. Additionally, AL theory predicts that in contrast to extreme events, more mundane experiences will be devalued. In this way, highly favorable circumstances deprive the individual of many routine pleasures. Brickman found that lottery winners took less pleasure in such small matters as watching television than did control subjects (although the correlative prediction that paraplegics would take more pleasure in mundane activities was not confirmed).

AL theory can thus be used to explain the small magnitude of the effects of objective circumstances on well-being. As a theory of happiness, however, it fails to account for the large observable individual differences in happiness. Indeed, if happiness were solely the outcome of processes of adaptation, we would expect that all individuals would answer that they were "neutral" on the dimension of happiness. Brickman and Campbell speak gloomily about the "hedonic treadmill" and give the impression that no one can remain happy for long. Yet Gurin reports that 35% of the population considers itself to be "very happy," and the stability coefficients of well-being measures, which range from .4 to .5 (Andrews & Withey, 1976; Costa & McCrae, Note 1; Palmore & Kivett, 1977), indicate that people tend to stay at the same relative level of happiness over long periods of time. This relative stability in well-being is most easily interpreted as an outcome of the stability of personality dimensions that underlie characteristic levels of happiness.

AL theory predicts that subjective judgments will be a function of the discrepancy of present stimuli from a neutral point determined by past experience. In the case of happiness, it appears that this formulation is insufficient. Constants representing the contributions of E and N must be added to the value predicted by AL theory. People will adapt to changing circumstances, which in the long run will neither add to nor detract from their happiness. But throughout these changes, the absolute advantages of being more extraverted or less neurotic will continue. We may all be on hedonic treadmills, but the treadmills of adjusted extraverts are much happier places to be.

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