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ARE THE VERY HAPPY TOO HAPPY?

ABSTRACT. Although positive emotions undoubtedly confer benefits, one can have too much of it. There is probably a point beyond which enjoyment interferes with realism, yet it is unclear where that point is. The original "States of Mind" (SOM) model (Schwartz and Garamoni, 1986; 1989) proposed that a ratio of [positive] to [positive plus negative] affective/cognitive states $[P/(P + N)]$ of about 0.62 is optimal, but previous research indicated that higher ratios may go with good mental health. The revised "balanced states of mind" (BSOM) model (Schwartz, 1997) suggests a higher cutoff, with ratios above 0.90 being dysfunctional. This paper reports a study of 72 very positive subjects (mean ratio = 0.85) and assessed possible dysfunction by means of questionnaires, role-plays, and physiological responses to induced stress. Signs of dysfunction were no more frequent among the most positive subjects (ratios of 0.90 and above) than among moderately positive subjects. This suggests that there is nothing wrong with the high levels of happiness in present day society. As yet, it is still not established how much more happiness will be too much. One possibility is that standard cognition/emotion measures need to be revised in order to detect truly excessive positivity in a sensitive manner.

KEY WORDS: states of mind model, cognitive/affective balance, anxiety, depression, assessment, happiness.

Positive thinking and positive emotions undoubtedly confer benefits. Optimists have lower blood pressure than pessimists (Raikkonen et al., 1999) and adjust more easily than do pessimists to the stresses involved in starting college (Aspinwall and Taylor, 1992). Happy people tend to sleep better, have more close friendships, and have more satisfying marriages than unhappy people (Myers, 1993). However, is it possible to be too happy? Is there some point beyond which the energy, enthusiasm, and sociability normally associated with happiness would give way to smug complacency, obnoxious arrogance, and lack of motivation? If so, this would of course be relevant for psychological theories of happiness. It would also pose a challenge to ethical systems depicting the promotion of happiness as a moral imperative (e.g., utilitarianism; Barrow, 1991). Finally, determining that too much happiness is bad for us could have alarming societal implications in an age during which average levels of happiness are very high in most cultures (e.g., Diener and Diener, 1996).

Our research addressed these issues by way of testing a model that aspires to provide a specific, quantitative definition of excessively positive thoughts and feelings. According to Schwartz and Garamoni's (1986; 1989) States of Mind (SOM) model, psychological functioning is related to the SOM ratio of positive (P) to positive-plus-negative ($P + N$) cognitions. The model identified five SOM categories, each defined by a unique range of SOM ratios, and proposed on the basis of principles derived from information theory, as well as a conceptualization of thought as an internal dialogue (Meichenbaum, 1977), that optimal functioning was associated with the "Positive Dialogue" (PD) category (SOM ratios ranging from 0.56 to 0.68). SOM values deviating from the PD were expected to relate to varying degrees of anxiety and depression (if too low) or with hypomania and pathological denial (if too high). The SOM model was extended to balance of positive and negative affect on the premise that a critical function of affective experience is conveying information (Garamoni et al., 1992). The research reported in this article addresses the balance of positive and negative affect in order to evaluate a modification of the SOM model designed to address anomalous findings relating to the original model.

In particular, research has shown that SOM ratios exceeding the PD range are adaptive and possibly optimal in a range of situations. For example, SOM ratios in the Positive Monologue (PM) range are associated with the ability of ex-smokers to remain abstinent following smoking cessation (Haaga et al., 1993), ease of social interaction (Fichten et al., 1991), and the ability to take a walk outdoors following treatment for agoraphobia (Michelson et al., 1991). These findings suggest that the PD does not necessarily characterize optimal psychological functioning and that SOM ratios greater than 0.68 (PM) are not necessarily dysfunctional.

We examined three possible explanations for these anomalous findings. First, overly high SOMs may indeed be problematic, but the ratio of 0.68 underestimates the cutoff point. A recent reformulation of the original SOM model, the Balanced States of Mind Model (BSOM; Schwartz, 1997) drew from Lefebvre's (1985) mathematical theory of consciousness in introducing novel quantitative parameters (see Table I for definitions and Schwartz (1997) for extended discussion of the derivation of this model) that provide theoretical distinctions between normal balance, optimal balance, and excessively high SOMs, distinctions lacking in the original model. The BSOM model predicts that

TABLE I

Revised BSOM categories and parameters

State of Mind	$P/[P+N]$	Hypothesized characteristics
Positive Monologue	0.91–1.0	Excess positivity; may be adaptive for brief periods
Positive Dialogue		
Super Optimal Dialogue	0.85–0.90	Positive self-evaluations in deep positive mood
Optimal Dialogue	0.78–0.84	Optimal balance; positive self-evaluations in positive mood
Normal Dialogue	0.67–0.77	Positive self-evaluations in neutral mood
Successful Coping Dialogue	0.59–0.66	Subnormal; successful management of negative events
Conflicted Dialogue	0.42–0.58	Associated with mild psychopathology
Failed Coping Dialogue	0.34–0.41	Moderate psychopathology; impaired self-esteem
Negative Dialogue	0.10–0.33	Chronic negative rumination; severe psychopathology
Negative Monologue	0.0–0.09	Complete despair (e.g., acute panic, profound depression)

general psychological adaptation should oscillate around a balance of 0.72 and that ratios exceeding 0.90 will be associated with maladaptive functioning. A study of depression treatment provided initial support for the reformulated BSOM model in that remitted patients concluded treatment near the predicted normal dialogue balance point (0.74), and those independently judged to have responded optimally to treatment obtained an average SOM of 0.81, matching the optimal dialogue set-point (Schwartz et al., in press). The BSOM prediction of maladaptive functioning when SOM exceeds 0.90 has not been tested, however, and this is one goal of our study.

Second, perhaps only those who maintain a high SOM through the use of repression will exhibit dysfunction. Research on the original SOM model relied heavily on self-report measures, which may yield misleading results for a subset of participants. For example, Shedler et al. (1993) found self-reports of distress to be valid but self-reports of favorable mental health to be ambiguous. Self-reported mental health characterized two distinct subgroups – genuinely mentally healthy participants, and those experiencing an "illusion of mental health" sustained by defensive denial of distress. The illusion of mental

health was identified on the basis of clinical ratings of participants' open-ended reports of early memories. The illusion-of-mental-health subgroup, relative to the truly mentally healthy, showed elevated cardiovascular reactivity to laboratory stressors. A related line of research found elevated physiological reactivity to stressors among people reporting low anxiety but high levels of social desirability, a combination believed to be indicative of "repressive coping" (Weinberger et al., 1979). We tested whether PM participants, who by definition acknowledge only very low levels of negative affect, might be especially likely to score high on social desirability. We also hypothesized that one explanation for prior failures to detect any negative consequences of excessively high SOMs could be that investigators have not differentiated genuinely highly positive people (henceforth, "True Positives") and those who achieve high SOMs through the use of repressive coping ("Repressors"). We included a social desirability measure in order to be able to make this subgroup distinction and predicted that the Repressors would show higher psychophysiological reactivity to a laboratory stressor than would the True Positives.

Third, perhaps the dysfunction associated with overly high SOMs is evident in interpersonal behavior. The grandiosity and hypomanic features predicted to be associated with a PM should interfere with effective interpersonal behavior, which has not received much attention in earlier studies of the original SOM model. For example, narcissism correlates highly with disregard for others (Wink, 1991), grandiosity, dominance, and hostility (Raskin et al., 1991), and highly positive thinkers displayed brusque and irritable behavior in an assertiveness situation (Safran, 1982). Similarly, positive mood states have been linked with decreased politeness in expressing difficult, potentially embarrassing requests (Forgas, 1999). PM individuals – who lack negative, inhibitory thoughts, and feelings – might be more likely than their more balanced counterparts to respond in an aggressive (e.g., overly irritable or brusque) manner to those believed to impede or frustrate their efforts. To explore this possible difference in interpersonal behavior, the present study compared the responses of PM and PD groups across a series of assertiveness role-plays.

In summary, this study addressed limitations of past research on the SOM model in order to provide a more comprehensive test of the hypothesis that overly high SOM ratios reflect dysfunction. We predicted that: (1) Participants with SOM ratios in the PM range (0.91–1.0)

would exceed those with SOM ratios in the PD range (0.67–0.90) on a measure of hypomania; (2) The PM group would score higher than the PD group on a self-report measure of defensiveness; (3) Repressors would evidence poorer functioning as measured by somatic complaints and by physiological reactivity to a stressful task, relative to True Positives; and (4) Across a series of role-plays, the PM group would offer more maladaptive and less socially appropriate (i.e., overly aggressive) responses than the PD group.

METHOD

Participants

Volunteers were recruited through newspaper ads and posted flyers. Interested individuals contacted study personnel and completed a telephone screening procedure, which consisted of a demographics questionnaire and the Positive and Negative Affectivity Schedule (PANAS; Watson et al., 1988). Callers who obtained SOM scores above 0.84 (see below) and who were at least 18 years old were invited to participate in the study. Eighty-one volunteers participated in the study. Data from 9 volunteers were excluded from analyses because their SOM values at the time of the study fell below 0.67, the lower limit of the Normal Dialogue range. Of the remaining 72 participants, over two-thirds (69%) were women. A majority (62%) were Caucasian, whereas 21% were African-American, 10% Asian-American, and 1% Hispanic. The average age was 31 (SD = 12.8), and the sample was highly educated, reporting a mean of 16.0 years of education (SD = 1.92).

Materials

Self-report Measures. Positive and negative affect were assessed using the general form of the PANAS (Watson et al., 1988), a 20-item self-report questionnaire of pure affect that assesses the frequency with which 10 positive and 10 negative emotions have been experienced. PANAS subscales demonstrate high internal consistency and the general form has high retest reliability (Watson et al., 1988). SOM ratios were derived for each participant by entering the scores on the Positive and Negative subscales of the PANAS into the formula, $P/(P + N)$. PANAS item scores were first converted from 1 to 5 ratings (which constrain SOM ratios to a range of 0.167–0.833

rather than 0–1) to 0–4 ratings (Amsel and Fichten, 1998). Finally, the occurrence of zero Positive or zero Negative feelings or thoughts poses a problem for the calculation of SOM ratios. A Positive sub-scale total of 0 would not happen in our sample given the selection criteria, but a Negative score of 0 could (i.e., 0 on each of 10 NA items on the PANAS). In such cases, the SOM ratio is the same (1.0) regardless of whether the PA total is 1 or 50, though these situations may well differ quite a bit psychologically. As recommended by Amsel and Fichten (1998), therefore, we added 1 to any total subscale score of 0.

The Hypomanic Personality Scale (HPS; Eckblad and Chapman, 1986) measured levels of grandiosity, unrealistic optimism, and vulnerability to disappointment. The HPS consists of 48 statements respondents rate as either mostly true or mostly false as applied to themselves. The HPS has a coefficient alpha of 0.87 and evidences adequate convergent and discriminant validity (Eckblad and Chapman, 1986).

Repressive coping was assessed using the Marlowe–Crowne Social Desirability Scale (MCS; Crowne and Marlowe, 1964), a self-report measure consisting of 33 true–false items. The scale measures defensive avoidance of social disapproval (Millham and Jacobson, 1978) secured through overcontrol or inhibition of impulse and affect (Weinberger, 1990).

The Somatization subscale of the Hopkins Symptom Checklist (HSCL-90; Derogatis and Meliseratos, 1983) measured somatic complaints. The HSCL-90 directs respondents to use a 5-point scale to indicate the extent to which they have experienced each of 90 different symptoms during the previous week. The Somatization subscale consists of 12 items, and has demonstrated satisfactory reliability and validity in samples of inpatients, outpatients, and asymptomatic individuals (Derogatis, 1983).

Stress Reactivity Task. The counting-backward task used by Shedler and colleagues (1993) has been shown to evoke physiological reactivity. After introducing the task as a test of mental ability, the experimenter asks the participant to count backward from 609 by 13s, bearing in mind that both speed and accuracy were important. Thirty seconds into the task – regardless of the participant's actual performance – the experimenter asks, "Can you go faster?"

Assertiveness Role-plays. Participants listened to four pre-recorded vignettes in which narrators describe situations in which other people make requests of the listener. All four vignettes depict situations that call for assertive refusal of a request. The situations were drawn from the Conflict Resolution Inventory (McFall and Lillesand, 1971) and the Behavioral Assertiveness Test-Revised (Eisler et al., 1975). Two vignettes depict strangers who ask if they may cut into a line ahead of the listener (i.e., "Grocery Store" and "Movie" scenarios). A third scenario describes a woman who has taken the listener's reserved seat at a sporting event (i.e., "Ballgame" role-play) and the fourth vignette describes a request by the listener's boss to stay late at work (i.e., "Boss" scenario). Male and female narrators were used to control for the potential effect of the narrator's sex on participants' responses, and the order in which vignettes were presented was counterbalanced.

Participants were told to imagine that each of the audiotaped situations was real and happening in the moment. After presenting each audiotaped vignette, the experimenter asked each participant to respond naturally and aloud, as though they were actually speaking to the person described in the vignette. Participants listened to the entire vignette before giving a response, and generally spoke briefly (i.e., under 60 s) following the prompt. Participants' responses were audiotaped.

Following completion of the study, responses to the four role-plays were coded for assertiveness using a scoring system developed by Pitcher and Meikle (1980). The Pitcher and Meikle (1980) system does not define effective assertion as a single construct (e.g., refusal), but takes into account several factors that may either add to or subtract from an effective response (Bruch et al., 1992). The coding system consists of 12 variables that cover both positive (e.g., praise, appreciation) and negative (e.g., aggression) verbal content. For any given response, coders assign occurrence versus non-occurrence ratings across each of the 12 variables. A summary score is obtained for each response using one of two formulae weighted differentially for positive and negative situations (Pitcher and Meikle, 1980). The total score for any given response may range from 0 to 8, depending on the verbal content included in the refusal.

Two independent raters unaware of participants' scores on all study measures coded role-play responses using Pitcher and Meikle's (1980) scoring system. For each response, raters determined whether each of the 12 content variables was present or absent. Inter-rater reliability

was calculated separately for "present" and "absent" ratings by dividing the Number of Agreements by the Number of Agreements and Disagreements. Coders demonstrated satisfactory reliability in their ratings, achieving agreement on "present" ratings 79% of the time, and on "absent" ratings 97% of the time.

An analysis of the intercorrelations for the mean assertiveness scores observed across the four role-play scenarios demonstrated that the correlations observed between mean assertiveness scores for the "Movie," "Grocery Store," and "Ballgame," were all in the same (i.e., positive) direction. These data were consequently averaged for use in some of the subsequent analyses. Data for the "Boss" vignette were always analyzed separately given its negative correlation with the remaining role-plays.

Physiological Measures. Exposure to stress activates two physiological systems, the sympathetic–adrenal medullary (SAM) system (e.g., Levi, 1972) and the hypothalamic–pituitary–adrenal (HPA) axis (Blood et al., 1994). Together, these systems prepare the body to respond to the stressor by increasing the total amount of energy (i.e., glucose) available to the body and by redistributing blood to the skeletal muscles (Baum and Grunberg, 1996).

Heart rate was selected as the index of SAM activity and was measured using a Polar Vantage XL Heart Rate Monitor, model #145900 (Lafayette Instrument Company, Lafayette, IN). This device includes a sensor (worn as a belt positioned around the torso and against the skin, immediately below the breastbone) and a separate monitor, which collects and stores heart rate values. Baseline heart rate values were obtained over a 10-min period at the start of the study, during which time participants were instructed to remain seated and relax. During the baseline period, heart rate was measured every 5 s. To minimize the impact of reactivity to the laboratory environment, heart rate data from the first two minutes and the last two minutes of the baseline were dropped. An average of the remaining heart rate values served as the baseline value. During the counting-backward task and each role-play, the heart rate monitor was activated at the start and then de-activated at the end of each task. Once again, heart rate values were recorded every 5 s, and the mean heart rate value observed during each task served as the value used in subsequent analyses.

Salivary cortisol was selected as the index of HPA activity and was sampled using Salivette devices. Each Salivette consists of a

1-inch-by-1/4-inch sterile cotton dental roll, which is placed between the gumline and cheek, where it collects a sufficiently large saliva sample (i.e., 2 ml) within approximately 5 min. To control for normal diurnal variation of cortisol (Baum and Grunberg, 1996), all samples were collected between 10:00 am and 3:00 pm. For each participant, two samples of salivary cortisol were collected – one at baseline and a second following the counting-backward task. Because levels of cortisol typically peak approximately 20 min following exposure to moderate psychological stressors (Baum and Grunberg, 1996), the second saliva sample was collected 20 min following the start of the counting-backward task.

Saliva samples were stored in a conventional freezer until data collection had been completed. Samples were then packed in dry ice and shipped to the Penn State Behavioral Endocrinology Lab, where the Salivettes were assayed in duplicate using a Coat-a-count (Diagnostic Products Corporation, Los Angeles, CA) that has been modified for use with saliva samples. The duplicate tests for each sample were averaged to arrive at the cortisol values used in the analyses. Data from the Behavioral Endocrinology Lab indicate that the average intra- and interassay coefficients of variation are less than 5% and 10%, respectively.

Physiological data were not available for all members of the sample. An insufficient amount of saliva was collected from 11 participants during either one or both sampling times, precluding the lab from running the cortisol radioimmunoassay on those samples. Also, equipment failure resulted in incomplete heart rate data for 11 participants. Physiological reactivity was operationalized as change from baseline (Llabre et al., 1991). To control for the potential impact of baseline values on reactivity scores (Benjamin, 1967), baseline values were entered as covariates in analyses of physiological reactivity (cf. Smith et al., 1996).

Procedure
Participants completed all tasks individually. Upon arrival, each participant was instructed to sit and relax for a 10-min period, during which time baseline levels of heart rate and cortisol were obtained. Next, each participant completed the self-report measures (presented in counterbalanced order) and a demographic/general health questionnaire. The experimenter then introduced the counting-backward task. Responses to the counting-backward task were audiotaped and heart rate values

were recorded. Additionally, 20 min following the start of this task, a second sample of salivary cortisol was obtained. In the meantime, each participant completed the assertiveness role-plays. At the conclusion of the study, the experimenter debriefed each participant about the counting-backward task and provided information about the central hypotheses of this study. Volunteers received $15 for their participation in the protocol.

RESULTS

Descriptive Statistics

Descriptive statistics for the self-report measures appear in Table II and intercorrelations of these measures in Table III. There were

TABLE II

Means and standard deviations on self-report measures

Variable	Mean	Standard deviation
PANAS: Positive Affectivity	28.17	6.60
PANAS: Negative Affectivity	5.15	3.82
PANAS: SOM ratio	0.85	0.09
Hypomanic Personality Scale	21.51	9.26
Marlowe–Crowne Scale	16.88	5.10

Note: $N = 72$ except the Hypomanic Personality Scale, for which $N = 71$. PANAS = Positive and Negative Affectivity Schedule.

TABLE III

Intercorrelations of self-report measures

	PA	NA	HPS	MCS	HCL
NA	22				
HPS	33	19			
MCS	33	−06	−06		
HCL	−18	13	28	−20	

Note: $N = 72$ for all measures, except the HPS. All decimal points are omitted. Correlations of absolute value greater than 0.24 are significant at the 0.05 level. PA = Positive subscale of the Positive and Negative Affect Schedule. NA = Negative subscale of the Positive and Negative Affect Schedule. HPS = Hypomanic Personality Inventory. MCS = Marlowe–Crowne Scale of Social Desirability. HCL = Somatization subscale of the Hopkins Symptom Checklist.

24 participants with PM 0.91–1.0, SOMs on the PANAS, while 48 had SOMs in the PD range.

Potency of the Counting Task as a Stressor. Participants' heart rates increased significantly from baseline ($M = 76.13$, SD $= 11.82$) to the counting-backward task ($M = 79.07$, SD $= 11.94$), $t(68) = 2.05$, $p < 0.05$, supporting the potency of the manipulation. Salivary cortisol levels did not change significantly, however, from baseline ($M = 0.17$ micrograms per deciliter, SD $= 0.09$) to the counting-backward task ($M = 0.18$ µg/dl, SD $= 0.09$), $t(64) = -0.82$, $p = 0.42$. Given that cortisol did not change significantly as a function of the stressor, no further analyses involving this variable were undertaken.

Prediction 1: PM versus PD in Hypomania

Contrary to Prediction 1, there was no significant difference between PM ($M = 20.42$) and PD ($M = 22.06$) subgroups with respect to hypomanic symptoms, $t(69) = 0.48$.

Prediction 2: Defensiveness in PM and PD Thinkers

On a self-report measure of defensiveness (i.e., the Marlowe–Crowne Scale; Crowne and Marlowe, 1964), participants with SOMs in the PM range obtained a mean score of 18.21 (SD $= 5.86$), while those with SOM ratios in the PD range had a mean score of 16.21 (SD $= 4.59$). Although directionally consistent with the prediction that PM participants would show greater levels of defensive self-deception, this difference was not significant, $t(70) = 1.59$, $p = 0.12$.

Prediction 3: Physiological Symptoms of Repressors and True Positives

Participants scoring above the median (17) on the Marlowe–Crowne Scale were assigned to a High Defensive subgroup, those scoring 17 or below to a Low Defensive subgroup. Crossing this classification with PM versus PD SOM ratios defines four subgroups: PM-High Defensive (i.e., Repressors, $n = 10$), PM-Low Defensive (i.e., True Positives, $n = 14$), PD-High Defensive (i.e., Defensive Balanced, $n = 31$), and PD-Low Defensive (i.e., Non-defensive Balanced, $n = 17$).

Contrary to expectations, Repressors did not endorse a greater number of physical symptoms than did True Positives, $t(22) = -0.21$, $p = 0.84$. Likewise, an ANCOVA using baseline scores as

TABLE IV
Physical symptoms and heart rate reactivity among Repressors and True Positives

	Mean (SD)	
	True Positives (N = 14)	Repressors (N = 10)
Hopkins Symptom Checklist		
Somatization	3.36 (3.23)	3.60 (2.17)
Heart rate		
Baseline	76.86 (16.76)	78.60 (9.96)
Counting backward	80.50 (16.90)	79.50 (13.10)
"Movie" role-play	77.57 (15.85)	75.10 (9.43)
"Store" role-play	79.92 (21.91)	72.80 (8.68)
"Boss" role-play	78.08 (17.73)	77.10 (8.73)
"Game" role-play	77.42 (14.01)	76.66 (10.52)

covariates revealed no significant differences between Repressors and True Positives in heart rate reactivity to the counting-backward task, $F(1, 21) = 0.75$, $p = 0.40$. Furthermore, a MANCOVA using baseline heart rate as a covariate showed no differences between Repressors and True Positives in mean heart rate across the four assertiveness role-plays, $F(4, 14) = 1.69$, $p = 0.21$. Descriptive statistics pertaining to these comparisons testing Prediction 3 are in Table IV.

Prediction 4: Assertiveness of PM and PD Groups

Participants' refusal responses differed significantly with respect to assertiveness across role-play situations, $F(3, 268) = 28.06$, $p < 0.001$. The "Boss" role-play elicited the least assertive responses ($M = 1.50$, SD $= 1.02$), followed by responses to the "Movie" ($M = 2.01$, SD $= 2.02$) and "Grocery Store" vignettes ($M = 3.11$, SD $= 1.26$). Volunteers gave the most assertive refusal responses to the "Ballgame" role-play, $M = 3.59$ (SD $= 1.54$).

PM and PD groups were compared with respect to the verbal content of their refusal responses across the Boss and remaining three role-plays. Contrary to expectations, results failed to show differences in the mean assertiveness scores earned by PM and PD groups across the role-plays, $F(2, 64) = 0.92$, $p = 0.40$. Furthermore, raters' codings of refusal responses revealed only three instances of aggression across the entire sample. Responses containing aggressive content occurred too infrequently to warrant statistical analysis, and an informal review of the distribution of these responses did not reveal any

noteworthy patterns: the three aggressive responses were given by Low Defensive participants whose SOM ratios were 0.96, 0.81, and 0.74, respectively.

DISCUSSION

The present study explored the dysfunction predicted to characterize excessively positive SOMs by examining the relation between SOM ratios and adaptive functioning across measures of subjective, physiological, and behavioral adjustment. It extended earlier research by testing the revised quantitative parameters presented in the newest version of the SOM model, taking repression into account in interpreting self-report data, and supplementing self-report measures of cognition and affect with behavioral and psychophysiological measures.

The results did not support the contention of the BSOM model that a PM is associated with dysfunction. The PM subsample did not exceed the PD subgroup in hypomanic symptoms, defensive self-deception, or aggressive behavior when challenged. Though inconsistent with the predictions of the BSOM model about the negative aspects of PM, these findings are consistent with those of Haaga et al. (1993) and Amsel and Fichten (1998), which also failed to find support for this aspect of the model. Although it was not couched in terms of the BSOM model and did not use the $P/[P + N]$ ratio, a recent study of people very high in positive affect similarly concluded that "being very happy does not seem to be a malfunction" (Diener and Seligman, 2002, p. 84).

Given high levels of average happiness in society, these findings can be seen as reassuring. Our PM group (SOMs of 0.91 or higher) clearly exceeded community averages on similar measures. A longitudinal study of over 2000 participants representing four generations of families in the Los Angeles, California area reported average affect scores yielding a SOM of 0.638 (Charles et al., 2001), derived from the Bradburn Affect Balance Scale (Bradburn, 1969). The PANAS general form, used in our study, yielded a similar average SOM of 0.659 in a large college student sample (Watson et al., 1988).

The possibility that maladaptiveness of PM SOMs has been masked previously by failing to take repression into account received no support. Repressors and True Positives did not differ in somatic symptoms, heart rate reactivity to a counting-backward task, or heart rate reactivity

to a series of interpersonal role-plays. The lack of observed differences between Repressors and True Positives might be explained by the finding that contextual factors determine whether expressing anger results in increased or decreased cardiovascular response (Engebretson et al., 1989). Some data indicate that the expression of social dominance elicits heightened cardiovascular response (e.g., Smith et al., 1996), while other studies (e.g., Lepore, 1995) suggest that exposure to social support generally diminishes this response. To the extent that Repressors and True Positives ascribed different meanings to the role-play scenarios presented in the present study, then they might have evidenced different patterns of physiological response that obscured true differences between the groups: some volunteers may have experienced the role-plays as opportunities to express social dominance (e.g., by refusing to allow stranger to cut ahead of them in a line), whereas others may have viewed the same situations in less antagonistic terms. Alternatively, the lack of differences between Repressors and True Positives in this study may simply reflect small sample sizes (i.e., $n = 10$ Repressors, 14 True Positives) and resulting lack of statistical power. In this regard, however, it is noteworthy that the effect was not even in the correct direction for corroborating a prediction of greater reactivity among Repressors (see Table IV).

In addition to sample size, measurement issues need to be considered in interpreting our results. In this and in most studies of the original SOM model, the SOM was operationalized using self-report scales that sample only moderately-toned experiences (e.g., happy, anxious, sad) and ignore more extreme ones (e.g., bliss, ecstasy, grief). These measures may have restricted ranges that render them subject to both floor and ceiling effects to the extent that they cannot effectively identify extreme moods and thoughts. Employing scales that sample only moderately-toned items to identify those in the PM range may thus produce many false positives. Future studies of whether those with SOM values exceeding 0.90 possess the maladaptive traits not evident among the PANAS-defined PM group we tested should address this possibility by using measures with more extremely-worded positive feelings and thoughts.

In addition, the present study focused solely on emotions, leaving open the question about whether very high levels of positivity might prove dysfunctional for other domains of experience. For example, longstanding cultural traditions suggest that a 100% positive

self-image that leaves no place for humility or self-improvement would be associated with some form of dysfunction (e.g., narcissism, defensiveness). Although difficult to empirically address, the BSOM provides a framework to investigate these issues as well.

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