

Subjective Change and Mental Health: A Self-Concept Theory*

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This study investigates the consequences of perceived improvements and perceived declines in life domain functioning. Self-concept theory suggests that perceived improvement should increase both negative and positive mental health because it violates the self-consistency standard but satisfies the self-enhancement standard. Because perceived decline violates both self-consistency and self-enhancement standards, it should strongly increase negative mental health and decrease positive mental health (the “double-dose effect”). These hypotheses were tested with data from a national probability sample and telephone interview with adults who evaluated change in functioning in six domains of life. More perceived improvement predicted increases in both negative and positive mental health. More perceived decline predicted increases in negative mental health and decreases in positive mental health. Perceived decline exhibited a double-dose effect on mental health. Findings suggest that subjective change produces complex mental health profiles because it is understood through multiple self-standards and is experienced through distinct reactive channels.

Subjective change is an appraisal that one is a new or different kind of person, or that some aspect of one's functioning has improved or declined. Individuals can think and feel that they have become a better or worse person by appraising whether they possess more or less of an attribute. Thus, for example, adults may feel that they have become better parents over the years because they have developed more patience. Individuals also may conclude that their functioning has improved or declined after judging that some aspect of their behavior has been enhanced or damaged by an event or experience. Individuals involved in inti-

mate relationships, for example, may ask whether that intimacy has improved or declined since they became parents.

How do individuals respond to perceptions of their own improvement or decline, and how is their mental health affected? Perceptions of personal declines should be undesirable and therefore should diminish mental health. Perceptions of personal improvements should be enhancing and therefore should enhance well-being. Ideally, clinical therapies and public health interventions that cause people to feel improved should result in uniformly better mental health.

The consequences of subjective change, on the other hand, may be paradoxical. Here, we offer a self-concept theory of subjective change that predicts and explains why perceived declines may exert a relatively strong effect on mental health (a “double-dose effect”) and why perceived improvement can enhance some aspects of positive mental health even while it aggravates aspects of negative mental health. This happens, we theorize, because individuals may view a piece of information about themselves (e.g., “I have improved”) according to multiple standards.

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Information about one's improvement can appear favorable by one standard and unfavorable by another.

In turn, people can feel simultaneously good and bad about information because they can react to this knowledge both emotionally and cognitively. Our thoughts and our feelings regarding events, experiences, and information are not always the same. Feelings and thoughts may be the same when an experience is judged as either "bad overall" or "good overall." Yet when an experience appears good by one standard and bad by another, individuals may feel one way (e.g., pleased at having eaten a bowl of ice cream) but think another (e.g., guilty and angry at oneself for exceeding the day's calorie limit).

Subjective Change and the Self-System

The self is a system of interrelated parts that collects, evaluates, and reacts to information about oneself. It consists of mechanisms that generate information, standards by which this information is made meaningful and relevant, and a reactive system whereby the information is experienced or "embodied" (Gecas and Burke 1995; Robinson and Smith-Lovin 1992; Sedikides and Strube 1997; Swann et al. 1987). Individuals use a variety of mechanisms to collect information about themselves; they use a variety of standards to judge whether that information is good or bad; and they react both affectively and cognitively to the quality (good or bad) of experiences and information. This system, we believe, is vital to predicting and explaining the mental health consequences of subjective change.

Self-Mechanisms

The mechanism of temporal self-comparison generates information about personal change. In temporal comparison, individuals examine the similarity of some facet of the self in relation to the past (retrospection) or compare the present with the anticipation or rehearsal of the future (prosppection). In turn, they indicate whether, and how much, they believe they have changed or may change. Judgments about

change, couched in evaluative terms such as *better* or *worse*, reveal whether people feel that their personal qualities, abilities, or functioning have improved or declined (Albert 1977; Suls and Mullen 1982; Suls and Sanders 1982).

Albert (1977) situated temporal comparison as a corollary to social comparison theory (Festinger 1954). Whereas social comparisons are interpersonal and ostensibly ahistorical, temporal comparisons are intrapersonal and are explicit appraisals of oneself through time. Individuals presumably make temporal comparisons (as they make social comparisons) to understand themselves more clearly or to diagnose and anticipate their personal capabilities.

Self-Standards

Self theory, in turn, suggests that individuals use self-standards to evaluate the quality and relevance of information. The standards of self-consistency and self-enhancement apparently are germane to understanding whether people will view improvement and decline as good, bad, or both. Consistency is the principle whereby the individual is thus perceived as remaining the same, while enhancement is the principle whereby the individual is perceived as a better (i.e., good) person (see, e.g., Jones 1973). Thus perceived change should violate the desire for self-consistency. In contrast, perceived improvement should satisfy the desire for self-enhancement, while perceived decline should fail to do so.

First, individuals use the principle of self-consistency to understand themselves and regulate behavior. Individuals desire feedback that is consistent with their self-definitions and with definitions of the situation (Brown and McGill 1989; Burke 1991; Demo 1992; Gecas and Burke 1995; Jones 1973; Lecky 1945; Mackinnon 1994; Swann 1990; Swann and Brown 1990). When it is apparent that others do not agree with an individual's self-image, the individual usually acts to restore consistency by trying to persuade others (Swann and Hill 1982), by selectively interacting with others who hold congruent opinions (Robinson and Smith-Lovin 1992), or by acting so as to restore the overall

integrity of the self-concept—for example, by doing volunteer work (Steele, Spencer, and Lynch 1993).

Self-consistency sustains several beneficial beliefs and feeling states. Whether individuals feel good (high self-esteem) or relatively bad (low self-esteem) about themselves, a consistent self purportedly gives them the sense that their lives and the world around them are controllable and predictable (see Janoff-Bulman 1992). A consistent self also provides self-confidence, which maintains initiative and propels social action (Foote 1951). Inconsistent feedback can cause distress because it interrupts the highly organized system (i.e., the experience) of consistency of self-standards and feedback (Burke 1991, 1996). Life event theorists similarly propose that positive as well as negative events cause distress by making individuals readjust routines (Brown and McGill 1989; Holmes and Rahe 1967; Rook 1984; Thoits 1983).

Second, people use the self-enhancement standard to guide behavior and to interpret feedback and experience. People desire and seek out information which suggests that they are good, that they are better than others, or that they are growing personally. Because perceived change refers to decline as well as to improvement, we prefer the more general term *self-evaluation*.

Individuals sometimes seek growth or change for the purpose of revising self-standards (Kiecolt 1994). Research shows that adults who are made aware of their inadequacies and their failings become more highly motivated for self-improvement than people who remain unaware of shortcomings (Taylor, Neter, and Wayment 1995). Realization of a need for growth therefore may increase the salience of the enhancement motive. Kiecolt (1994) argues that some instances of change, particularly growth or self-improvement, are intentional and are directed toward alleviating the distress of a lower evaluative standard.

Reactive Channels

The reactive part of the self-system consist of the channels through which individuals respond to the information collected with the

self-mechanism and judged according to the self-standards. Through these channels, namely affect and cognition, people respond emotionally and cognitively to the judgments of their experiences as good or bad. When information or an experience can be judged as uniformly bad or good, individuals' feelings and thoughts about that information or experience are similar. Thus, good experiences should lead to positive feelings and positive thoughts about oneself and one's life; bad experiences should lead to negative feelings and thoughts.

When information and experience are a mixture of good and bad, however, feelings and thoughts will be misaligned. Swann et al. (1987) describe the reaction to information that is both good and bad as generating a "cognitive-affective crossfire." Positive feedback, for example, is uniformly good for individuals with high esteem, because such information satisfies the self-standards of self-consistency and self-enhancement. In contrast, positive feedback to individuals with low self-esteem is good from one perspective and bad from another. This feedback is good because it satisfies the standard of self-enhancement; it is bad because the positive feedback violates the standard of self-consistency.

Using an individual-differences approach, Swann and colleagues provided feedback to individuals with high and with low self-esteem. They found that feelings and thoughts were in alignment for individuals with high self-esteem: those persons felt good about the experience and were confident, for example, about the information. Feelings and thoughts were not in alignment, however, for individuals with low self-esteem. Those persons felt good about the experience but doubted and mistrusted the feedback.

Whereas Swann et al. (1987) showed that some kinds of experience (such as positive feedback) for certain kinds of people (those with low self-esteem) can generate divergent reactions, our study seeks to extend this logic to the consequences of subjective change. We argue that perceived decline is uniformly bad because it violates the need both for self-consistency and for self-enhancement. When individuals perceive themselves as having declined, their

feelings and thoughts about themselves and their lives should be negative. As a result, aspects of negative mental health should be intensified by the experience of more perceived decline, while aspects of positive mental health should be diminished.

On the other hand, perceived improvement entails information that is likely to be judged as both good and bad. Perceived improvement satisfies the need for self-enhancement, but it violates the standard of self-consistency. According to self-concept theory, perceived improvement should generate thoughts and feeling that are misaligned. Adults may feel good about the improvements but may think the changes are unpleasant, or they may think that the improvement is desirable but feel that the changes have been somewhat unpleasant. As a result, individuals who see more improvements in themselves should report mixed mental health. They should show higher levels of negative mental health than adults who have remained about the same; they also should show higher levels of some aspects of positive mental health.

We investigate two hypotheses that emerge from this self-concept theory of subjective change. First, the perceived improvement hypothesis predicts that adults who report more subjective improvement should report higher levels of both negative and positive mental health than adults who have remained the same. Second, the perceived decline hypothesis predicts that adults who report more subjective decline should report higher negative and lower positive mental health than adults who have remained the same. Moreover, perceived decline, relative to perceived improvement, should exhibit a "double dose" effect on mental health: it should show a stronger association with mental health because decline violates two self-standards (consistency and enhancement), whereas improvement violates one standard (consistency) and satisfies the other (enhancement).

We investigate these hypotheses in the context of the perceptions of life-domain functioning. Retrospectively, individuals perceive the quality of their functioning in the domains of health, appearance, sexual intimacy, close relationships, work, and finances.

The utility of the life-domain approach is twofold. First, life domains place the study of perceived change in the context and experience of everyday life. Second, life domains are allied with social roles, which are sources of role identities (Gecas and Burke 1995; Mead 1934; Stryker 1987). Therefore, how people see themselves functioning in a life domain should implicate the self and identity processes.

METHOD

Sample

Data are taken from a national probability sample of noninstitutionalized and English-speaking adults aged 25 or older, living in the 48 contiguous states, whose households include at least one telephone. Households were selected randomly with random-digit dialing. In Spring 1993, one adult from each household was selected randomly and interviewed by telephone (for 30 minutes on average) by experienced interviewers.

Data for descriptive analyses are weighted to correct for overrepresentation of households with multiple telephone lines and for the under-representation of younger adults in multi-adult households, and to match Census Bureau estimates of the proportion of English-speaking adults living in the major geographical regions (northeast, midwest, south and west).

With an estimated response rate of .62, the sample consists of 1,108 adults with an average age of 45.6 (sd = 14.8), 59 percent of whom are females. Fully 72 percent of respondents are married, 10 percent are single or never married, 6 percent are widowed, and 12 percent are divorced. Eight-three percent are Caucasian, 6 percent are African-American, 2 percent are Asian, and nearly 3 percent are of Latino or Hispanic origin.¹ Thirty-five percent have 12 years of schooling, 27 percent received 16 years, 11 percent less than 12 years, and 27 percent between 13 and 15 years. Just over two-thirds (68 per-

¹ These percentages do not round to 100 because some respondents identified themselves as belonging to an "other" racial group or refused to answer the question.

cent) are employed part-time or full-time, 3 percent are unemployed, 12 percent are homemakers, 14 percent are retired, 2 percent are disabled, and 1 percent are students. The median combined household income category is 4.0 (mean = 3.9, *sd* = 2.1), indicating that the average income ranges from \$20,000 to \$29,999.

Measures

Temporal self-comparisons. Functioning was assessed in the domains of health, finances, close relationship, work (or job situation), physical appearance, and sexual functioning. For each domain, respondents evaluated their current functioning before their past functioning. They indicated their current functioning on a scale from 0 to 10 (0 = the worst possible state or situation; 10 = the best possible state or situation).

We operationalized temporal self-comparison by asking respondents whether they functioned worse, better or about the same 5 years ago in relation to the present. Interviewers read aloud the month and year dating exactly five years before the interview ("Now think back to 5 years ago—that is, to February 1988"). If respondents said their functioning was better or worse, they were asked whether their functioning had changed a lot, somewhat, or a little.

All respondents were asked about their health, occupation, physical appearance, finances and sexual functioning. The quality of past and current relationship, however, was assessed only for respondents married five or more years and for unmarried respondents involved in a close relationship. A total of 104 respondents were not involved in a

close relationship. Rather than dropping these respondents, we imputed the mean of the variable for their current functioning in a close relationship, and included a dummy variable in the subsequent regressions to adjust for their inclusion. All respondents assessed their current work functioning because we wished to use a broad definition of work. Thus respondents were asked specifically to evaluate their paid work or job situation so that unemployed or laid-off persons and those on sick-leave could judge their work in the present and during the past five years.

Few respondents expressed uncertainty about any life-domain question ("don't know") or refused to answer. As might be expected, slightly more respondents refused to answer the questions about sexual functioning. In such cases, we imputed the item mean.

To decide whether to analyze perceived change separately for each life domain or to aggregate change over all life domains, we examined the correlation of perceived change in life domains and conducted exploratory factor analysis. Table 1 reports the descriptive statistics of the perceived change variables. Among the mean levels of change, values that are close to 3.0 reveal domains in which respondents tended to remain about the same. Stable functioning characterizes functioning in the domains of health (3.3), sex (3.2), and finances (2.9). Values above 3.0 suggest more perceived decline; this tended to be the case for physical appearance (3.6). Values below 3.0, however, indicate more perceived improvement in functioning. More respondents tended to

Table 1. Descriptive Statistics, Perceived Change Variables

	1	2	3	4	5	6
1. Health	—	.31**	.09**	.13**	.02	.11**
2. Physical Appearance		—	.06	.13**	.06	.17**
3. Close Relationship			—	.45**	.01	.19**
4. Sexual Functioning				—	.05	.16**
5. Work					—	.26**
6. Finances						—
Mean	3.3	3.6	2.7	3.2	1.9	2.9
<i>sd</i>	1.3	1.4	1.4	1.6	2.0	1.70

Note: Variables ranged from 0 to 6; 3 = about the same, 0–2 = improvement, and 4–6 = decline.

* $p < .05$, ** $p < .01$ (two-tailed).

perceive improvements in close relationship (2.7) and, even more, in work (1.9).

The correlations between the perceived change variables suggests modest overlap in life-domain functioning. That is, perception of change in one domain of functioning tends to be independent from change in most other domains. In the three strongest correlations, perception of change in health tends to coincide with change in physical appearance (.31); perception of change in close relationship tends to correspond with change in sexual functioning (.45); and perception of change in work tends to correlate with change in financial functioning (.26).

This correlation pattern suggested a latent structure that was supported by results of an exploratory factor analysis reported in Table 2. Explaining 68 percent of the covariation between the subjective change variables, the structure of subjective change breaks down into physical (health and appearance), interpersonal (close relationship and sexual), and economic (work and finances) domain factors.

Mental health. Current level of dysphoria is measured with 9 symptoms of depression. Respondents indicated whether they felt each symptom none, some, most or all of the time during the month preceding the interview. Because of the subjective nature of the duration of symptoms, we prefer to construe this scale as a measure of dysphoria rather than depression.

Adapted for use over the telephone and for a normal adult population (see Derogatis et al. 1974), the symptoms are (1) feel full of life, (2) have a lot of energy, (3) feel worn out, (4) feel tired, (5) feel very nervous, (6) feel calm and peaceful, (7) feel down-hearted and

blue, (8) feel happy, and (9) feel so down in the dumps that nothing could cheer you up. Dysphoria thus consists of the (physical) suppression of vigor and energy and the (affective) suppression of positive emotion and absence of happiness. A higher score indicates the presence of greater dysphoria. The questions about dysphoria immediately preceded the questions about current and past life-domain functioning.

We also measured psychological well-being, using the scales of self-acceptance and personal growth. These scales are theoretically grounded (Ryff 1989) and have been validated in numerous studies employing community and nationally representative samples (Ryff and Keyes 1995). The self-acceptance scale measures how positively people feel about the self, how accepting people feel about their personalities, and their acceptance of their achievements in life. The scale of personal growth indicates how much people see themselves changing and growing, their openness to experiences that challenge how they see themselves, and whether they are trying to improve and realize their potential. Each scale consists of three items; a higher score indicates more acceptance of self or greater personal growth. After five unrelated questions, the questions measuring self-acceptance and personal growth followed the questions about life-domain functioning.

Finally, respondents evaluated the overall quality of their lives (hereafter called *life satisfaction*). Toward the end of the telephone interview (and after all other questions in this study were asked), respondents were instructed to provide an overall summary "of how things [were] going" in their lives. Respondents rated the overall quality of

Table 2. Principal Components Extraction and Varimax Rotation, Perceived Change Variables

	Factor Loadings		
	Interpersonal	Physical	Economic
1. Health		.81	
2. Physical Appearance		.79	
3. Close Relationship	.86		
4. Sexual Functioning	.82		
5. Work			.85
6. Finances			.72
Eigenvalue	1.8	1.2	1.1
Percentage of Variance	29.6	19.7	19.0
Cumulative Variance Explained	29.6	49.3	68.3

Note: Only factor loadings above .40 are shown.

their present lives on a scale from 0 to 10 (0 = worse possible life imaginable; 10 = best possible life imaginable).

Table 3 presents the descriptive statistics for the mental health outcomes. The dysphoria scale possesses excellent reliability, while the abbreviated well-being scales are modestly reliable. As detailed by Ryff and Keyes (1995), the lower internal consistencies of the well-being scales partially reflect the conservative nature of the alpha estimator for brief scales whose indicators have been chosen to represent the conceptual breadth of each construct. The three items were chosen to represent the subdimensions of each construct. Nonetheless, the shortened scales employed in this study confirmed (through the data) the theoretical structure of psychological well-being, and replicated age profiles found in earlier studies employing the larger 20-item and 14-item scales (see Ryff and Keyes 1995). This finding suggests that the short scales possess reliable (replicable) variance.

Table 3 also reveals that the measures of mental health and well-being correlate positively but only modestly. The highest correlation is .43, which suggests that the mental health measures tap distinct constructs that are related to an overall concept (health or wellness).²

Social structural control variables. For statistical control and efficiency, we use several indicators of fixed characteristics that measure social structural position. Placement in social positions and social hierarchies can affect individuals' vulnerability, among other things, to life events and pressures to change (e.g., McLeod and Kessler 1990). Dichotomous variables indicate the respondent's gender, employment status (1 = employed part-time or full-time; 0 = unemployed or not in the labor force), marital status (1 = currently married; 0 = all others), and race (1 = Caucasian; 0 = all other adults). Age

is measured continuously by subtracting each respondent's date of birth from the date and year of the interview.

Educational attainment is measured by asking respondents to indicate the highest year of school they completed, ranging from less than high school (grades 1–11) to post graduate (grades 17 or higher). Respondents then indicated their total household income, selecting specified ranges of income (less than \$5,000, \$5,000 to \$9,999, \$10,000 to \$19,999, \$20,000 to \$29,999, \$30,000 to \$39,999, \$40,000 to \$49,999, \$50,000 to \$69,999 and \$70,000 or higher).

For the multivariate tests of hypotheses, we regress mental health outcomes separately on the temporal self-comparative judgments and the sociodemographic indicators reflecting social structural conditions that might affect both life-domain functioning and mental health. All models include regressors that adjust for imputation of missing data (life-domain functioning and income). All multivariate analyses use the unweighted sample because the conclusions were the same regardless of sample weighting (see Winship and Radbill 1994).

RESULTS

We test the hypotheses through graphic analysis of the unadjusted means of mental health, and conclude with multivariate analyses of the relationship of subjective change to mental health.³ Graphically we plot the level

² Because numerous conceptual dimensions might explain the covariation between our mental health measures (i.e., affective, cognitive, presence or absence of health), we do not speculate about the reasons for the distinctiveness of the measures. Moreover, we do not perform measurement analyses because we do not employ enough measures in this study to test such measurement theories adequately.

³ Affect control theory (see, e.g., Robinson and Smith-Lovin 1992) and identity theory (Burke 1991) would lead to an hypothesis that greater subjective change ("deflection") should generate stronger (perhaps longer) emotional reactions. For this paper, we collapsed in regard to the perceived amount ("a lot," "somewhat," "a little"); instead we focused on the amount of change in the six domains of life. Collapsing over the perceived amounts of change increased cell sizes and permitted more reliable analyses. Moreover, preliminary analyses (available upon request) did not reveal a consistent pattern whereby more perceived change ("a lot," compared with "somewhat," and compared with "a little") was related more strongly with the mental health outcomes. One problem in linking vague quantifiers such as "a lot" with a consistent pattern of emotional reaction (or well-being outcomes) may be that people of various backgrounds have different actual amounts in mind when they use the same vague quantifier (see Schaeffer 1991). Thus, for example, older adults who

Table 3. Descriptive Statistics, Mental Health Outcomes

	1	2	3	4
1. Dysphoria	—	-.43	-.17	-.42
2. Self-Acceptance		—	.17	.43
3. Personal Growth			—	.14
4. Life Satisfaction				—
Mean	9.4	14.6	15.8	7.7
sd	3.9	3.1	2.4	2.5
Number of Items	9	3	3	1
Range	0–27	3–18	3–18	0–10
Alpha Reliability	.84	.52	.40	—

Note: All correlations $p < .01$ (two-tailed)

of mental health by specific combinations of change in life-domain factors. The combinations of change are based on the results of the exploratory factor analysis of subjective change; that analysis revealed a physical domain consisting of health and physical appearance, an interpersonal domain consisting of close relationship and sexual functioning, and an economic domain consisting of work and finances.

In the physical domain, for example, individuals' health and appearance could each remain the same. Alternatively, individuals could perceive various combinations of change in health and appearance: same in one and improved in the other, same in one and declined in the other, improved in both, declined in one and improved in the other, and declined in both health and appearance. We arrange the combinations of change in terms of the number of self-standards violated. Thus, from left to right, the combinations are "same-same" (0), "same-improve" (1), "same-decline" (2), "improve-improve" (2), "decline-improve" (3), and "decline-decline" (4). Graphically, levels of negative mental health (for example) should increase gradually when arranged from left to right.

Figure 1 shows the level of dysphoria for each combination of subjective change. As predicted by the perceived improvement hypothesis, dysphoria is at its lowest when individuals experience no change (same-same), but increases gradually as the number of improvements increases in each life-

domain factor (physical, relational, and economic). Dysphoria peaks for individuals who experience declines in both facets of a domain, in keeping with the double-dose (decline) hypothesis.

Figure 2 plots the level of self-acceptance for each combination of subjective change. Self-acceptance is highest for individuals who experienced no change; it decreases for those who have experienced some improvement ("same-improve" and "improve-improve"). In each life-domain factor, self-acceptance tends to be the lowest for individuals who perceived declined functioning in both facets.

The perceived improvement hypothesis also predicts that some aspects of mental health should be elevated for individuals who report improvement. Figure 3 presents the level of personal growth for each combination of subjective change. Findings here are consistent with the hypothesized effect of improvement on positive mental health. That is, the level of personal growth is highest for individuals who perceived improvements in both facets of each life-domain factor, while individuals perceiving no change and those with declines in both facets report the lowest personal growth.

Figure 4, which plots levels of life satisfaction by combinations of subjective change, also partially supports the improvement hypothesis. Life satisfaction is highest for individuals whose functioning has remained the same in both facets of a life domain. In contrast, life satisfaction among individuals who reported improvements in both facets of a life domain factor is nearly as high as among individuals who remained the same. Figure 4, however, clearly supports the perceived decline hypothesis. That is, life satisfaction is much lower among individuals who

report "a lot" of change may have less actual change in mind than younger adults who also report "a lot" of change. This suggests that future papers linking subjective amounts of change to mental health should stratify the analyses—for example, by age.

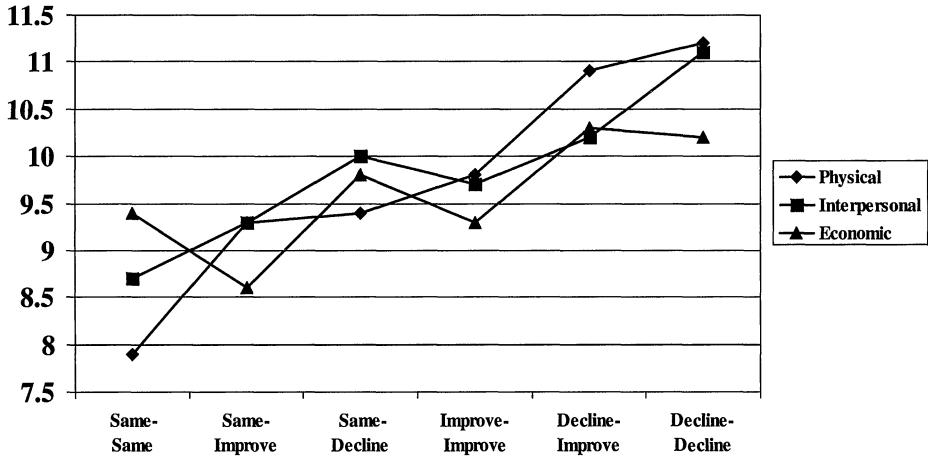


Figure 1. Unadjusted Mean Dysphoria, by Combinations of Change

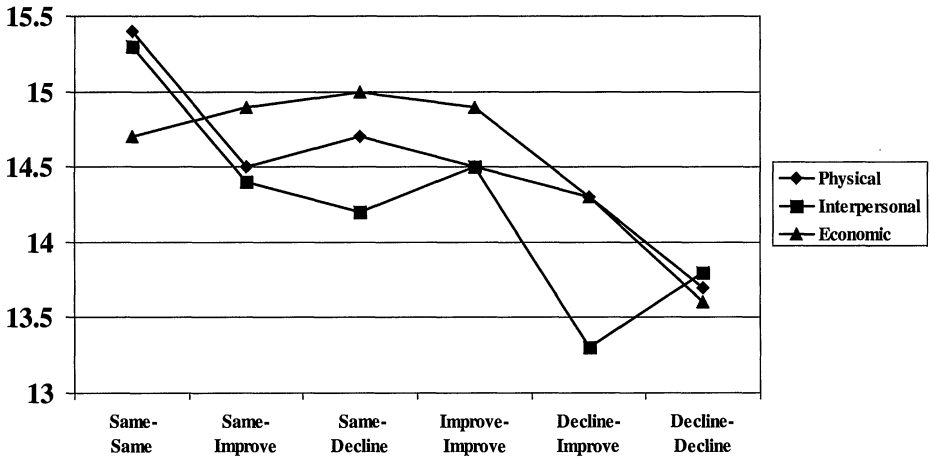


Figure 2. Unadjusted Mean Self-Acceptance, by Combinations of Change

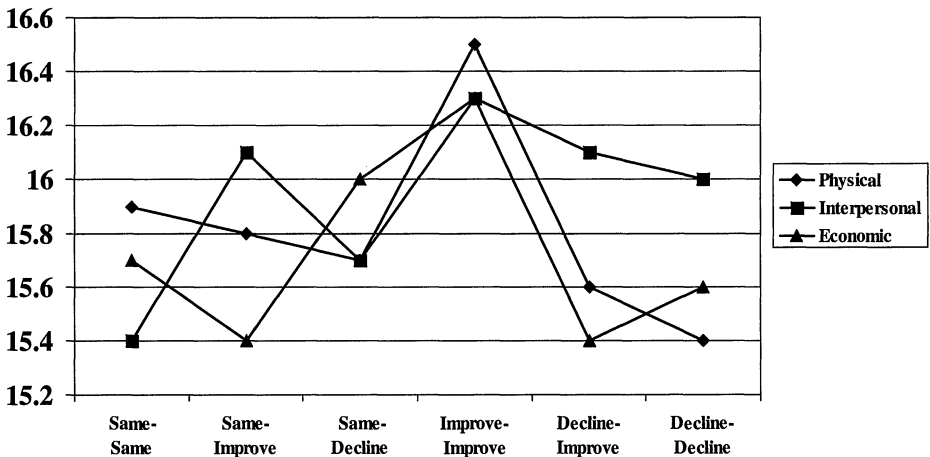


Figure 3. Unadjusted Mean Personal Growth, by Combinations of Change

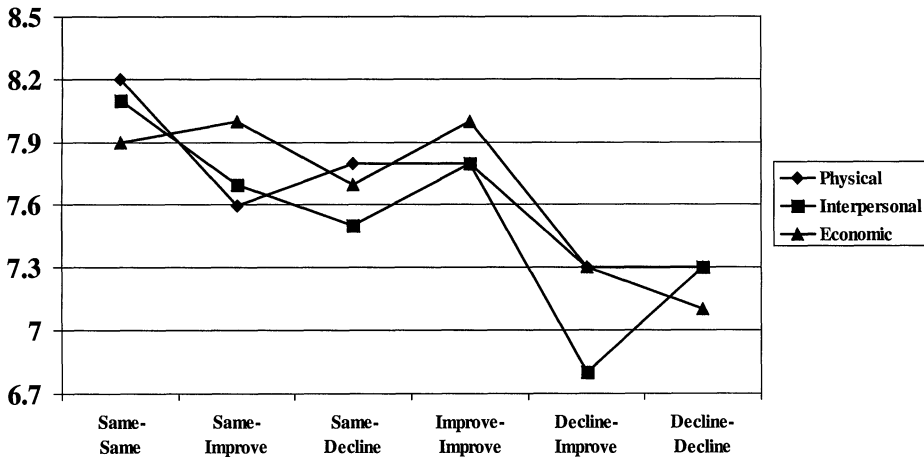


Figure 4. Unadjusted Mean Life Satisfaction, by Combinations of Change

reported declines in functioning in both facets of a life-domain factor.

In the multivariate analyses, we investigate whether the relationship of perceived change to mental health holds when we adjust for sociodemographic variables. In addition, we reparameterize the subjective change variables to investigate the effect of the amount of change on mental health. We coded the number of life domains in which individuals reported improvement, and created a second variable measuring the number of domains in which individuals perceived declines.⁴

Table 4 presents the results of the regression of each mental health outcome on the subjective change variables and on the sociodemographic control variables (estimates of control variables not shown). Findings confirm the improvement hypothesis that the perception of improvement in more domains of life corresponds to increases in both negative and positive mental health.

These findings hold even after adjusting for the current level of life-domain functioning in Model 2. We adjusted for current func-

tioning because preliminary analysis (see Appendix Table A1) revealed that adults who perceived improvement in more life domains reported lower levels of current functioning than did adults whose functioning remained the same. Similarly, adults who perceived declines in more life domains reported lower current functioning than adults whose functioning remained the same. This point suggested an alternative explanation for our hypothesized findings: that adults who perceive more subjective change also report lower current domain functioning, which might explain why more perceived improvement is associated with increased negative mental health. Even with controls for current functioning, however, more perceived improvement, compared with remaining the same, predicts elevated dysphoria, diminished self-acceptance, but also higher levels of personal growth, and similar levels of life satisfaction.

Findings in Table 4 are also consistent with the perceived decline hypothesis. That is, a unit increase in perceived decline results in increased dysphoria, decreased self-acceptance, and diminished life satisfaction. Perceived decline, unlike perceived improvement, is not associated with levels of personal growth. Even so, the relationship of perceived decline to mental health is consistent with the theorized quality of perceived decline as uniformly unpleasant, and therefore is associated with more negative and less positive mental health.

⁴ This coding is parsimonious, provides a direct test of our hypotheses, and is consistent with the graphic analyses, which showed that changes in the facets of each life domain factor had very similar effects on mental health. Also, the intercept in the regressions is the mean value of the mental health outcome for adults whose functioning has remained the same in all life domains.

Table 4. Ordinary Least Squares Regressions of Mental Health Outcomes on Perceived Change Aggregated Over the Six Life Domains

Outcome and Predictors ^a	Model			
	1		2	
	<i>b</i>	<i>B</i>	<i>b</i>	<i>B</i>
Dysphoria				
Improved	.27**	.10	.22*	.09
Same	—	—	—	—
Declined	.82**	.30	.49**	.22
Current Functioning			-.20**	-.29
Intercept	9.5		16.8	
<i>R</i> ²	.12		.21	
Self-Acceptance				
Improved	-.20**	-.08	-.17*	-.07
Same	—	—	—	—
Declined	-.44**	-.20	-.20**	-.11
Current Functioning			.15**	.30
Intercept	12.3		6.8	
<i>R</i> ²	.09		.10	
Personal Growth				
Improved	.12*	.06	.14*	.07
Same	—	—	—	—
Declined	.02	.01	.11	.04
Current Functioning			.05**	.10
Intercept	15.1		13.2	
<i>R</i> ²	.10		.11	
Life Satisfaction				
Improved	-.06	-.05	-.03	-.04
Same	—	—	—	—
Declined	-.30**	-.27	-.12**	-.15
Current Functioning			.11**	.42
Intercept	6.8		2.9	
<i>R</i> ²	.09		.29	

Note: All estimates are based on the unweighted sample because results are unchanged when the sample is weighted (avg. $N = 1,056$).

^aAll estimates are net of age, gender, race, educational attainment, household income, and employment and marital status.

* $p < .05$; ** $p < .01$ (two-tailed)

Moreover, and in keeping with the double-dose hypothesis, perceived decline exhibits a much stronger association with mental health than does perceived improvement. In particular, the standardized estimates of the association of perceived decline with dysphoria and self-acceptance are more than double the standardized association of perceived improvement with those outcomes. That is, these are the outcomes for which both types of perceived change are predictors; this situation permits adjudication of the double-dose effect.

In sum, our data support a self-concept theory of the effect of subjective change on mental health. As predicted, the effect of per-

ceived improvement on mental health is neither simple nor straightforward. Rather, more perceived improvement is associated with increases in both negative and positive mental health because, according to self theory, improvement is both good and bad. Improvement is good because it satisfies the self-enhancement standard; it is bad because it violates the self-consistency standard. Perceived decline is associated with increased negative and decreased positive mental health because, we argue, it violates both self-standards. For this reason, we believe, the association of perceived decline with mental health is much stronger than the

association of perceived improvement with mental health.

DISCUSSION

Our goal in this paper was to more clearly understand the nature and impact of subjective change on mental health. Although we concede that the *process* of improvement may not be pleasant, it is quixotic that the accomplishment and feeling of improvement should not be desirable. However, a self-concept theory of the consequences of subjective change predicts and explains how greater perceived improvement could lead to mixed mental health.

We presented a model of the self as a system consisting of the collection, evaluation, and reaction to information. Individuals collect information about themselves through self-mechanisms, evaluate that information against self-standards, and respond to that information through reactive channels.

The mechanism of temporal self-comparison enables individuals to learn about themselves through time, and results in judgments of improvement, decline, or stability. The principles of self-consistency and self-enhancement enable individuals to determine whether the information is good, bad, or both. When this information is deemed both good and bad—as we predict will happen when people feel improved—individuals will experience mixed mental health because humans react to information affectively and cognitively. The feeling and thinking channels are relatively independent (see Swann et al 1987; Zajonc 1980, 1984). It is possible, therefore, to feel good about an experience and yet think that the experience was bad, or to think that an experience was good but feel bad about having had that experience (see Swann et al 1987)

In other words, self theory suggests that the benefits of improvement (enhancement and growth) cannot be achieved without sacrificing self-consistency. When viewed by the standard of consistency, improvement is bad; improvement is good, when viewed by the standard of enhancement. Perceived decline, on the other hand, should be pernicious and associated with ill-health. Because it violates the desire both for enhancement and for con-

sistency, greater decline should be associated strongly with increased negative and decreased positive mental health. Perceived decline therefore provides a double dose of unpleasantness.

Our study strongly supports this theory of subjective change. Mean-level analysis of mental health by combinations of change clearly supported the hypotheses of perceived improvement and perceived decline. Adults who remained the same in both facets of a life-domain factor (e.g., the health and the appearance facets of the physical domain) exhibited the lowest level of dysphoria and the highest levels of self-acceptance and life satisfaction. In comparison, dysphoria was higher and self-acceptance was lower for adults who perceived improvement in one facet (“same-improved”) or both facets (“improved-improved”).

At the same time, adults who perceived improvement in both facets exhibited a similar level of life satisfaction and a markedly higher level of personal growth. In other words, using the content of each item in Ryff’s (1989) scale of personal growth, our findings indicate that adults who perceive more positive change actually see themselves changing positively, are open and receptive to self-challenging experiences, and believe that they are trying to improve and realize their potential.

We observed the same pattern of results when we regressed the mental health outcomes on variables reflecting the amount of change over the life domains, with controls for sociodemographic variables, and then for current life domain functioning. Perceived improvement in more domains of life was associated with increased dysphoria, decreased self-acceptance, and increased personal growth.

The mean-level analysis also showed that adults who perceived declines in both facets of a life domain reported much higher levels of dysphoria than all other adults, and reported less self-acceptance and lower life satisfaction. The same findings emerged in the multivariate regression analyses. Despite adjustments for sociodemographics and current life-domain functioning, more perceived decline was associated with increased dysphoria and with decreased self-acceptance

and life satisfaction. Current functioning explained a substantial proportion of the shared variance (from 40 percent to 60 percent) of perceived decline and mental health, but the association of subjective decline with mental health remained statistically significant. Perceived decline also exhibited a double-dose effect on mental health, as revealed by the relative size of the standardized coefficients of perceived decline (often twice the size) to perceived improvement.

In sum, the relationship of both perceived improvement and perceived decline can be predicted and explained by a self-concept theory of subjective change. Positive change is a mixed blessing: "I may be different, but at least I'm a better person." Negative change appears to be a double curse: "I'm not only different, I'm also a worse person."

Was perceived change manufactured in part by the process of measurement, and were our findings partially the result of the order of administration of measures? We required all respondents to think back five years and therefore may have reawakened the feeling of change, which in turn may have affected how they responded to the questions about mental health. We add, however, that the dysphoria scale preceded the measurement of change; the well-being scales and life satisfaction question followed the measurement of change. Given the mixed effects of positive change, in particular, on mental health, one cannot conclude that the measurement of mental health affected how people thought about themselves through time, nor that thinking about change affected how they responded to the mental health scales.

We cannot disentangle cause from effect in these cross-sectional data. Sometimes we have used causal language, however, because perceived change is generated from retrospective judgments. That is, respondents provide subjective causal accounts of their lives through time. Longitudinal data would provide means for estimating whether perceived change during one period preceded and explained mental health at a subsequent period.

Are the effects of subjective change unrelated to the causes of feeling changed? Change may be the result of attempts to

evoke changes in oneself and the environment (see, e.g., Kiecolt 1994). Change also may be reactive and unplanned, as when we receive feedback that a performance we delivered was not as good as we had perceived. Under such circumstances, according to Burke and Cast (1998), individuals will revise their own views to restore self-consistency if attempts to bring that feedback into line with their perceptions are unsuccessful. Reactive change (improvement or decline) may therefore be framed more negatively because it is a failure to sustain one's prior standard. Evocative change, however, may be framed as an accomplishment. Even when attempts to change result in failure, individuals may view that change more positively because at least they tried to change.

Perhaps subjective change is unsettling because of the causes of its duration. Why do people continue to think of themselves as changed—either improved or less good? It takes time to get used to new ideas, new products, and new persons. Similarly, individuals may need time to get used to new versions of themselves. But how much time must pass before the feeling of being new wears off and one begins to feel like oneself again? Perceived changes that linger may be detrimental precisely because the lingering represents the inability to get used to "new selves." We believe that the reactive and evocative triggers of subjective change, and the causes of the duration of subjective change are exciting directions for future research.

To focus squarely on the theory of subjective change, we controlled for, rather than featured, placement in the social structure. Future researchers might benefit from investigating whether and how perceived change links society to the self. Most research in the area of personality and social structure uses explanatory variables that measure the process and motive of self-enhancement. The desire for self-enhancement has been used to explain the consequences of reflected appraisals, social comparisons, psychological centrality, and attribution (Rosenberg, 1979, 1981). Yet perceived change (i.e., temporal self-comparison) and the motive of self-consistency might help to explain additional

portions of shared variation between social structures and mental health outcomes.

We hope that this research at least may stimulate interest in the mechanism of temporal self-comparisons. Using the criterion of variance explained, existing research on temporal self-comparisons alleges that perceived change has little or no direct relationship to important outcomes like mental health and well-being. Certainly in relation to social comparisons and to disparities between achievements and goals, temporal comparisons are weak predictors of life satisfaction and global well-being (Andrews and Withey 1976). Moreover, respondents may use temporal self-comparisons less frequently than social comparisons or goal discrepancies when thinking about and quantifying the quality of their lives (Ross, Eyman, and Kishchuk 1986).

The above-mentioned variables, however, are temporally diverse, potentially overlapping, and related in complex ways. Social and temporal comparisons are usually not contemporaneous, and the past might be less salient than the present (see, e.g., Shmotkin 1991). Goal discrepancies explicitly require temporal assessments and therefore might overlap with temporal comparisons. In short, the relationship of temporal comparisons with well-being outcomes may be masked or explained by social comparisons and goal discrepancies.

The gloomy assessment of temporal comparisons as unrelated to important outcomes seems premature, especially when one recognizes the relevance of the self-concept for understanding the complex relationship of subjective change with mental health.

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Appendix Table A1. Ordinary Least Squares Regression of Current Life Domain Functioning on Perceived Change and Sociodemographic Variables

Predictors	<i>b</i>	<i>B</i>
Improved	-.32*	-.06
Same	—	—
Declined	-1.95**	-.32
Age	-.04**	-.08
Educational Level	.00	.00
Income Level	.65**	.17
Employed (= 1)	5.8**	.35
Married (= 1)	4.6**	.27
Female (= 1)	1.2**	.08
White (= 1)	.00	.00
Intercept	37.9	
<i>R</i> ²	.39	

Note: Estimates are adjusted for imputation of missing data for the income variable.

* $p < .05$; ** $p < .01$ (two-tailed)

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