Aspects of Self-Regulation and Self-Structure as Predictors of Perceived Emotional Distress

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Research on the link between the self and emotional distress has produced many measures that have unknown conceptual and empirical interrelations. The authors identified two classes of self-related variables shown previously to be important predictors of emotional distress. The first class, termed self-regulatory variables, included ego-resiliency, ego-control, ego-strength, and hardiness. The second class, termed self-structure variables, included self-complexity, self-discrepancy, self-consistency, self-attitude ambivalence, and role conflict. Using a two-step structural equation modeling (SEM) strategy, the authors examined first the factor structure of this set of measures. Second, they determined that Elasticity and Permeability (two self-regulatory factors) accounted for unique variance in the prediction of perceived emotional distress (Agitation and Dejection), whereas Self-Discrepancy and Self-Complexity (two self-structure factors) did not.

Several classic theories in psychology implicate dynamic and structural characteristics of the self as contributors to emotional distress. According to Freud (1923/1961), distress can be linked to the strength of the ego and the corresponding ability to resolve conflict within the intrapsychic constellation (i.e., between the id and superego). Lewin (1935, 1936) placed the self within a dynamic "lifespace," reflecting the combined organization of the person and the psychological environment. He characterized personal adaptability and development as qualities of the lifespace, such as the degree of differentiation and communication between lifespace regions. Rogers (1959) emphasized the emotional benefits gained as a person brings the perceived self and the ideal self into greater alignment.

Many contemporary theories continue to emphasize characteristics of the self as correlates or determinants of emotional distress. An unfortunate consequence of this common emphasis is that theorists have generated variables and measures that potentially are similar, both conceptually and empirically. Research on the self lacks coherence due, in part, to this surfeit of individual difference constructs (Hattie, 1992; Wylie, 1979). Seldom have potential similarities been acknowledged and synthesized. Thus, a researcher wishing to examine the self and emotional distress stirs up a cloudy pool of theoretical constructs.

The purpose of our research is to assess and compare self-related predictors of perceived emotional distress. These predictors refer to a variety of aspects of self, and they derive from two broad research domains: personality and social cognition. Our fundamental questions are as follows: (a) What primary dimensions underlie the many self-related variables that pervade the psychologi-

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cal literature? and (b) Which of these dimensions relate strongly and uniquely to the subjective experience of emotional distress?

No single study can incorporate every pertinent self-related measure; thus, we regard our work as a contribution to a collective process, joining other recent attempts to synthesize the field's understanding and definition of the self-system (e.g., Compton, Smith, Cornish, & Qualls, 1996; Showers, Abramson, & Hogan, 1998). We begin by organizing several prominent measures of the self into two broad theoretical classes. We then examine empirically the dimensionality within and across these classes.

The Self and Perceived Emotional Distress

What aspects of the self-system relate to perceived emotional distress? Our review of the literature suggests that two general classes of self-related measures are important: those pertaining to self-regulation and those pertaining to self-concept structure.[1] Several measures require participants to assess directly their self-regulatory tendencies and abilities, and we identify these as indicators of self-regulation. Other measures involve tasks that assess relations between different aspects of the self, and we identify these variables as indicators of self-concept structure.

SELF-REGULATORY VARIABLES

One class of constructs taps dynamic properties of the self-system. The constructs we consider within this class are ego-strength, hardiness, ego-control, and ego-resiliency. A common perspective among these variables is that the self executes and integrates psychological functions; the self is an agent designed to relate external reality to intrapsychic factors (Sarason, 1966). These variables refer to the integrity of the self-system, reflecting what theorists have referred to as self-as-process (Hall & Lindzey, 1957) or the executive function of the self (Baumeister, 1998). These self-regulatory constructs have been developed primarily by personality researchers with clinical backgrounds; consequently, they emphasize the ego.

Ego-strength is one of the earliest-appearing examples of what we refer to as a self-regulatory construct. Freud (1923/1961) stressed the importance of the ego's capacity to manage internal and external threats through the use of adaptive defenses. According to Freud, ego-strength represents the ability to perceive and accept reality and to defend against intrapsychic and extrapsychic sources of anxiety and displeasure. In keeping with this broad conception of ego-strength, the Ego-Strength Scale (ES) (Barron, 1953) was constructed to distinguish between patients who responded successfully to psychotherapy and patients who showed no improvement. Barron adopted the term "ego-strength" to reflect the scale's assessment of a general sense of "adaptability and personal resourcefulness" (Barron, 1953, p. 327). Recent empirical work has found the ES to be negatively associated with neuroticism and psychoticism (Hussain & Kumari, 1995) and to be positively associated with indicators of psychological health and well-being (Schuldberg, 1992).

Two additional and interrelated self-regulatory constructs are ego-control and ego-resiliency. These constructs are part of a theoretical framework that links psychodynamic theory with Lewin's conception of motivational states (J. H. Block & Block, 1980). According to Lewin (1935), two psychological systems become increasingly differentiated during human development: a system of needs and a sensorimotor system. J. H. Block and Block (1980) place the ego at the boundary between these two systems, and they identify the permeability and elasticity of this boundary as especially critical to ego functioning.

Ego-control is related to boundary permeability. It reflects a person's tendency to withhold or express impulse. Overcontrolled persons are characterized by excessive impermeability with resulting inhibition, indirect manifestation of impulses, and intolerance for ambiguity. Undercontrollers are more nonconforming, expressive, spontaneous, distractible, and disinhibited.

Ego-resiliency is associated with elasticity—the ability to alter the degree of boundary permeability in response to contextual and psychological contingencies. The ego-resilient person can modulate adaptively the degree of ego-control that he or she exercises, thus enhancing the ability to cope with potentially stressful experiences. By contrast, the brittle (ego-unresilient) person is inflexible, operates within a restricted range of ego-control, and is unable to cope within traumatic contexts.

The final self-regulatory construct on which we focus is hardiness, which is composed of three interrelated components: control, commitment, and challenge (Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982). Each of these components represents a distinct style of cognitive appraisal that supports a tolerable interpretation of potentially stressful life events. High control reflects a sense of autonomy and the perception that one's outcomes are self-determined. Committed persons perceive a sense of meaning and purpose and are psychologically invested in themselves and their social context. Challenge represents an appreciation of change as opportunity and an interpretation of life events as stimulating rather than threatening. The global hardiness construct (computed from the three components) has received empirical support as a stress moderator. For example, persons high in hardiness express greater frustration tol-

erance and perceive an evaluative threat as less stressful than do individuals low in hardiness (Wiebe, 1991; Wiebe & McCallum, 1986). Despite the frequent use of a global score, examinations of hardiness measures indicate that challenge indices operate differently from indices of commitment and control (Compton et al., 1996; Hull, Lehn, & Tedlie, 1991; Maddi, 1990; Sinclair, Leupold, & Tetrick, 1994; Wagnild & Young, 1991). Because of the psychometric and conceptual differences among the three components (Carver, 1989; Hull, Van Treuren, & Virnelli, 1987), we will treat each separately.

Potential relations among measures of self-regulation. The above descriptions highlight some of the conceptual similarities that exist among self-regulatory variables. In particular, the ego-strength, ego-resiliency, and global hardiness constructs appear to share common features. Although they may differ to some degree in their conceptual sophistication (J. H. Block & Block, 1980), each of these constructs represents a person's degree of resourcefulness or elasticity. As noted previously, ego-control represents a potentially distinct aspect of self-regulation: permeability.

This distinction between elasticity and permeability may be relevant to the differences among the three components of hardiness that we discussed above.[2] In early research, Kobasa et al. (1982) used measures of cognitive structure and security as indicators of the challenge component. However, only the security measure was related to global hardiness. Subsequent factor analyses demonstrated that this security scale is weakly related to the overall hardiness dimension (Hull et al., 1991). In short, all past work on hardiness suggests that the challenge component is unique empirically from control and commitment. Challenge (unlike control and commitment) is likely to be related more closely to ego-undercontrol (or high permeability) than to resourcefulness (or high elasticity).[3] Like ego-undercontrol, high challenge reflects a proactive orientation and a lack of concern with stability and security.

SELF-STRUCTURE VARIABLES

A second class of constructs reflects how beliefs about the self are organized. Variables within this class include self-complexity, self-discrepancy, self-consistency, role conflict, and self-attitude ambivalence. These variables represent a subset of the self-as-object (Hall & Lindzey, 1957; Sarason, 1966) or reflexive consciousness (Baumeister, 1998). Unlike these broader constructs, however, self-concept structure variables do not assess the specific content or valence of the self-concept. Primarily developed by social-cognitive theorists, these variables (hereafter referred to as self-structure variables) emphasize interrelations among self-attributes.

A clear example of what we mean by self-structure is self-complexity. According to Linville (1985, 1987), the extremity to which individuals respond to life's ups and downs is related to the complexity of their self-representations. Greater self-complexity refers to an organization of self-knowledge characterized by a greater number of attributes that are structurally independent of one another. When new self-relevant information is encountered, the impact of this information is restricted to specific self-aspects for persons high in self-complexity. For persons low in self-complexity, however, input from one self-attribute spreads to other self-attributes because of the structural dependence among separate attributes of the self. Persons high in self-complexity, therefore, are less affected (physically and psychologically) by negative, as well as positive, life events (Linville, 1987; but see Woolfolk, Novalany, Gara, Allen, & Polino, 1995).

A second self-structure construct is self-discrepancy. Self-discrepancy theory (SDT) (Higgins, 1987, 1989, 1996a, 1996b; Higgins, Klein, & Strauman, 1985; Higgins, Shah, & Friedman, 1997) emphasizes the relations between distinct domains of self-knowledge and the importance that these relations have for human functioning. The theory centers on the interplay between three self-domains (the actual, ideal, and ought selves) rather than the content of the self-concept per se. The actual self reflects the attributes and characteristics that a person believes he or she actually possesses. The ideal self reflects the attributes and characteristics that a person would ideally like to possess (i.e., the person's hopes or aspirations). Finally, the ought self reflects the attributes and characteristics that a person should or ought to possess (i.e., the person's duties or obligations). The attributes of the ideal and ought selves serve as self-guides to which a person compares his or her actual attributes. Perceived discrepancies (and congruencies) between the actual self and self-guide attributes trigger specific emotions. The type of emotion depends on the type of self-guide (ideal or ought) that is activated. SDT maintains that actual:ideal discrepancies are associated with dejection and dysphoria, whereas actual:ought discrepancies are associated with anxiety and agitation.[4]

Additional self-structure constructs are self-consistency, role conflict, and self-attitude ambivalence. Self-consistency, which reflects the degree to which distinct beliefs about the self are perceived to be consistent with one another, often has been regarded as a critical contributor to well-being (Allport, 1955; Kelly, 1955; Morse & Gergen, 1970; Rogers, 1961). For example, the self-evaluations of persons with consistent self-concepts are affected less by momentary shifts in social comparison standards (Morse & Gergen, 1970). Although the empirical evidence on this issue is rather scant, it can be argued that a

person with an inconsistent self-concept should be vulnerable to intrapsychic conflict, instability in self-evaluation, and poor psychological adjustment (Baumgardner, 1990; Epstein, 1973; Snygg & Combs, 1949).

Societal and relationship roles represent a specific domain of self-concept attributes within which conflict can be problematic (J. Block, 1961; Gergen, 1971; Goffman, 1959). When these roles are well integrated, a person can function smoothly across contexts. However, considerable role conflict contributes to emotional distress (Donahue, Robins, Roberts, & John, 1993). In addition to being situationally influenced, the experience of role conflict may reflect a chronic and dispositional inability to synthesize diverse demands on the self and adapt within different social contexts.

A neutral self-evaluation can be the result of a few moderately positive attributes canceling out a few moderately negative attributes. Alternatively, an equally neutral self-evaluation can be the result of many extremely positive attributes canceling out many extremely negative attributes. In the second case, the self-concept is marked by a great deal of evaluative, or attitudinal, ambivalence (Kaplan, 1972). Attitude ambivalence results in more extreme, or polarized, reactions to the attitude object (Katz & Hass, 1988). Similar to other attitudes, self-attitude ambivalence should be associated with greater perceived emotional distress than with self-attitude indifference.

Potential relations among measures of self-structure. As with the self-regulatory variables, no systematic examination of the relations among these self-structure variables has been reported in the literature. It is unclear how these self-structure variables relate to one another empirically. One possibility is that a single, evaluative dimension will represent the common components of these measures. If so, high levels of self-complexity and low levels of self-discrepancy, self-inconsistency, role conflict, and self-attitude ambivalence may be associated with one another. A second possibility is that self-complexity represents a distinct factor. We regard this second possibility as more probable given that past research has shown only slight correlations between self-complexity and other self-perception variables such as self-esteem and self-reported depression (Campbell, Chew, & Scratchley, 1991; Linville, 1985, 1987; Woolfolk et al., 1995).

PERCEIVED EMOTIONAL DISTRESS

Similar to its self-related predictors, emotional distress is a heavily researched, multiply defined, and multiply determined construct that crosses many of the specialty areas of psychology. In the present study, our theoretical focus is on perceived emotional distress. We acknowledge the common, sometimes defensive, tendency toward favorable self-evaluation (Brown & Hutton, 1995; Sedikides, 1993; Sedikides & Strube, 1997) that may carry over into self-reports. Nevertheless, we focus on the phenomenological, or introspective, experience of emotional distress for two reasons. First, self-report measures of emotional distress are used widely in psychological research (Suls & Harvey, 1996), and these measures often show a direct relation to external indices of emotional distress (Steer, Beck, & Garrison, 1986). Second, some theorists would consider the phenomenological experience of emotional distress, in itself, to be the fundamental psychological reality (Aron, Dutton, Aron, & Iverson, 1989; Gerrig, 1994; Rogers, 1951, 1959; Sedikides, Oliver, & Campbell, 1994). It is this phenomenological experience that we wish to investigate.

We focus on two frequently identified dimensions of perceived emotional distress: agitation and dejection (Beck, 1976; Cattell, 1973; DeRivera, 1977). Agitation refers to feelings of anxiety, nervousness, and worry; dejection refers to feelings of sadness, disappointment, and dissatisfaction. Agitation and dejection have been identified as fundamental components of neuroticism, which represents a pervasive individual difference in the tendency to experience negative emotions (John, 1990). Importantly, these same two dimensions are a central focus in research relating the self to emotional distress. In their initial research on SDT, Higgins et al. (1985) differentiated between agitation- and dejection-related emotions, arguing that these represent unique responses to distinct types of self-discrepancies. Subsequent research on SDT has focused almost exclusively on this distinction, making agitation and dejection central features of the theory itself (Higgins et al., 1997). Likewise, patterns of ego-resiliency and ego-control have been linked to emotional problems characterized both by agitation (Wolfson, Fields, & Rose, 1987) and by dejection (Block, Gjerde, & Block, 1991). In the present study, we concentrate on separate agitation and dejection dimensions to be consistent with this distinction as it was made in past research relating the self to emotional distress.

Data Analysis Strategy: A Two-Step Approach to Structural Equation Modeling

Do the self-regulatory and self-structure variables that we have identified refer to distinct correlates of perceived emotional distress? Our research has two interrelated goals addressing this question. First, we are interested in the number of dimensions underlying the self-regulation, self-structure, and perceived emotional distress variables included in this study. Our purpose is to identify multiple common aspects of these measures. Second, we are interested in the pattern of relations among these dimensions. These patterns of relations will

help us to determine the degree to which dimensions of self-structure account for variance in perceived emotional distress that is unique to that contributed by self-regulatory dimensions, and vice versa.

These two goals correspond to the distinction between the two submodels in structural equation modeling (SEM): the measurement model and the structural model. Our first goal corresponds with a confirmatory measurement model, in which the researcher specifies predicted relations between the observed measures and their latent factors. Our second goal corresponds with a confirmatory structural model, in which the researcher specifies predicted (and alternative) relations among the latent factors. Although the measurement and structural submodels can be assessed simultaneously, there are disadvantages to this approach in practice.

Anderson and Gerbing (1988) advocate a two-step approach that provides a separate assessment of the measurement model (factor structure) and the structural (substantive) model. The primary advantage is a reduced potential for interpretational confounding. If measurement and structural specifications are attempted simultaneously, then the strengths and patterns of relations between the measured variables and the latent factors (i.e., the measurement model) can change dramatically as different structural models are assessed. Thus, the factor structure becomes dependent on the specific substantive model under examination, and identification of the source of poor overall model fit may be ambiguous.

Because no past research has examined the empirical relations among this set of self-regulatory and self-structure variables, we adopted Anderson and Gerbing's (1988) two-step modeling approach. In the first step (the measurement model), we specified the factor structure underlying the self-regulatory, self-structure, and perceived emotional distress variables. Based on conceptual similarities among the measures, we anticipated a total of six factors: two factors (Elasticity and Permeability) for the self-regulatory variables, two factors (Discrepancy and Complexity) for the self-structure variables, and two factors (Agitation and Dejection) for the emotional distress measures. After assessing the adequacy of this factor structure, we were in a position to consider respecifications of the measurement model based on the estimated pattern coefficients and residuals.

After we determined an adequately fitting measurement model, our second goal was to test theoretical models examining relations across the latent dimensions (the structural model). The fundamental question at this stage was whether the self-structure dimensions accounted for unique variance in the prediction of perceived emotional distress over and above the variance accounted for by the self-regulatory dimensions (and vice versa).

METHOD

Participants and Procedure

One hundred ninety-nine introductory psychology students (133 females and 66 males) participated in five 1-hour sessions over a 5-week period. Participants volunteered for the study to fulfill a course option. Participants' ages ranged from 17 to 55 years ($M = 19.78$, $SD = 3.59$). Seven participants did not complete all five sessions: 5 completed four sessions, 1 completed two sessions, and 1 completed one session. Reasons for attrition were withdrawal from the psychology course and scheduling difficulties. Test sessions involved groups of 5 to 9 participants. Sessions were separated by at least 1 week but never by more than 2 weeks. At each session, participants engaged in one card-sorting task and completed a questionnaire packet. During the first session, each participant completed the California Adult Q-sort (CAQ, described below) and provided demographic information. For the remaining sessions, the order of all measures and card sorts was counterbalanced.

Measures

SELF-REGULATORY VARIABLES

Participants completed card sorts and measures assessing the self-regulatory variables of ego-strength, hardiness, ego-control, and ego-resiliency.

Ego-strength. Participants completed the ES (Barron, 1953). Scores on the 68-item measure range from 0 to 68, with higher scores indicating greater ego-strength (Cronbach's $\alpha = .60$). According to Barron, the items assess the following characteristics: (a) physical functioning and physiological stability, (b) seclusiveness, (c) religious attitudes, (d) moral posture, (e) sense of reality, (f) personal adequacy and ability to cope, and (g) phobias and infantile anxieties.

Hardiness. Participants completed the Personal Views Survey (PVS) (Hardiness Institute, 1985). The 50 PVS items measure three subscales (control, commitment, and challenge) and an overall hardiness score. Scores on each subscale can range from 0 to 50. Cronbach's α values for the control, commitment, and challenge subscales were .56, .76, and .74, respectively.

Ego-control and ego-resiliency. Participants sorted the 100 items in the CAQ (J. Block, 1961/1978) using a quasi-normal, nine-category distribution ranging from *extremely undescriptive* to *extremely descriptive*.[5] These self-placements then were correlated with separate templates of a prototypical ego-resilient person and a prototypical undercontrolled person. These two templates

were created by nine personality psychologists who demonstrated very high interrater agreement (Funder & Block, 1989). CAQ-based ego-resiliency (ER) and ego-control (EC) scores can range from –1.00 to 1.00, with higher scores indicating greater resiliency and undercontrol, respectively.

SELF-STRUCTURE VARIABLES

Participants completed card sorts and/or measures assessing the self-structure variables of self-complexity, self-discrepancy, self-consistency, self-attitude ambivalence, and role conflict.

Self-complexity. We used Linville's (1985) self-complexity measure. Participants sorted 33 randomly ordered cards. Each card contained a single trait or feature. The 33 features were selected empirically by Linville to represent a wide range of positive and negative dimensions used by students to describe themselves. The experimenter instructed participants to sort the cards into groups or piles representing items that belonged together. Participants could use any criteria they found meaningful to construct the groups. However, they were to focus on how they perceived themselves while sorting. There was no limit to the number of groups formed or the number of items sorted into a group. A trait could be placed in multiple piles by writing that trait on one of the blank cards provided. Consistent with Linville, we used Scott's (1969) *H* statistic to derive self-complexity scores. The *H* statistic is used to represent the number of independent or nonredundant dimensions underlying each sort, with higher scores indicating greater self-complexity. Although we do not have reliability information specific to our sample, Linville (1987) reports a test-retest correlation of .70 for measures taken 2 weeks apart.[6]

Self-consistency. We used Gergen and Morse's (1967) Measure of Self-Consistency (MSC). From a list of 34 adjectives, participants selected five positive and five negative traits that they considered to be self-descriptive. Participants then entered these traits on the top and left side of a 10×10 matrix. Finally, participants rated each pair of traits for perceived consistency. This procedure resulted in 45 ratings that were summed for an overall self-consistency score. These scores can range from 0 to 135, with higher scores indicating greater self-inconsistency.

Role conflict. We adapted the MSC to assess the degree of role conflict (RC) experienced by participants. Participants compared five roles (student, friend, romantic partner, son or daughter, and worker) and rated each pair of roles for compatibility. These five roles are important self-concept components for most undergraduates (Donahue et al., 1993). RC scores can range from 0 to 30, with higher scores indicating greater role conflict.

Self-attitude ambivalence. We applied Kaplan's (1972) general procedure for assessing attitude ambivalence to the measurement of self-attitude ambivalence (AMB). Participants were asked to rate themselves on two unipolar evaluative dimensions. First, while considering only their positive qualities, they indicated how positively they perceived themselves on a 0 (*not at all positive*) to 3 (*extremely positive*) scale. Next, while considering only their negative qualities, they indicated how negatively they perceived themselves on a 0 (*not at all negative*) to 3 (*extremely negative*) scale. We constructed a self-attitude ambivalence score for each participant in four stages. First, we determined the overall self-attitude by placing a negative sign before the negative unipolar rating and adding this rating to the positive rating. Second, we assessed polarization by taking the absolute value of the overall self-attitude. Third, we computed the total affect represented in the two unipolar ratings (total affect = positive rating + absolute value of negative rating). Fourth, we computed self-attitude ambivalence by subtracting the polarization score from the total affect score. AMB scores can range from 0 to 6, with higher scores indicating greater self-attitude ambivalence.

Self-discrepancy. We used the Selves Questionnaire (SQ) (Higgins et al., 1985) to measure self-discrepancy. Participants generated separate lists of attributes to describe their actual, ideal, and ought selves. Participants then rated the degree to which they possessed, wished they possessed, or felt they should possess each attribute (depending of the self-domain of focus). We followed Higgins's (1987) procedure for computing self-discrepancy scores. First, we removed antonyms and synonyms within each list of self-attributes to eliminate redundancies. Second, we determined whether and to what degree each actual-self attribute matched or mismatched each attribute listed in the ideal-self and the ought-self descriptions. Using this procedure, four types of attribute-pair relationships were possible: (a) matches involved synonymous pairs that differed by no more than one point on the extremity scale, (b) mismatches-of-degree involved synonymous pairs that differed by two or more points on the scale, (c) mismatches involved pairs of attributes that were antonyms, and (d) nonmatches involved pairs having no semantic relation to one another. We then computed two self-discrepancy scores: actual:ideal discrepancy (SQ-AI) and actual:ought discrepancy (SQ-AO). These scores were calculated by subtracting the number of mismatches and mismatches-of-degree from the total number of matches such that true mismatches were weighted twice as much

as mismatches-of-degree or matches. Higher SQ scores represent greater self-discrepancy.

Three judges rated independently an initial sample of 50 SQs using this procedure. The intraclass correlations were .85 for actual-ideal discrepancy and .75 for actual-ought discrepancy. The remaining questionnaires were scored independently by pairs of these original judges. Inconsistencies were resolved through discussion among all three judges to determine the final scores for each participant.

PERCEIVED EMOTIONAL DISTRESS

Participants completed multiple, standard measures of perceived emotional distress. To differentiate agitation from dejection, we adopted a procedure similar to that used by Higgins and his colleagues (e.g., Higgins, Bond, Klein, & Strauman, 1986). Three measures assessed primarily dejection: the Beck Depression Inventory (BDI) (Beck, 1967), the Self-Rating Depression Scale (SDS) (Zung, 1965), and the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). Because these scales were developed to assess the multidimensional construct of depression (of which dejection is a subcomponent), two coders selected independently those items from the three scales that reflected dejection-related emotions. The coders each selected the same 11 items, with no disagreements (see the appendix). Cronbach's α for the 11-item dejection scale was .86.

Participants also completed a measure that assessed primarily agitation: the neuroticism subscale from the Big Five Inventory (BFI-44) (John, Donahue, & Kentle, 1991). Because neuroticism represents the tendency to experience all negative emotions (not just agitation), the two judges who coded the depression measures also coded the BFI-44. They were instructed to select items that specifically assessed agitation-related emotions. Again, the coders' independent judgments were in complete agreement. Each coder selected the same six items as indicators of agitation (Cronbach's $\alpha = .80$).

RESULTS

Table 1 contains descriptive statistics for all variables included in the analyses. Table 2 displays the correlations among these measures based on the 168 participants for whom we had complete data on all measures.

STEP 1: MEASUREMENT MODEL

We specified an initial measurement model representing the hypothesized six-factor factor structure. Two factors represented the self-regulatory variables: Elasticity (ego-resiliency, ego-strength, PVS control, and PVS commitment) and Permeability (ego-undercontrol and PVS challenge). Two factors represented the self-structure variables: Self-Discrepancy (actual/ideal self-discrepancy, actual-ought self-discrepancy, self-attitude ambivalence, role conflict, and self-inconsistency) and Self-Complexity (self-complexity). Finally, two factors represented the emotional distress dimensions: Agitation and Dejection. We used three item parcels to indicate each emotional distress dimension. The model included item parcels instead of the agitation and dejection composite measures to provide multiple indicators for each of these latent constructs. We used parcels rather than individual items because multiple-item parcels are more reliable indicators.

TABLE 1: Descriptive Statistics for All Measures

Measure	M	SD	n	*Skew*	*Actual Range*
Ego-Resiliency	.44	.19	199	–.87	–.32 to .82
Ego-Undercontrol	.05	.17	199	–.04	–.47 to .46
PVS-Control	37.59	4.55	198	–.51	23.53 to 47.06
PVS-Commitment	38.75	5.66	198	–.66	19.79 to 50
PVS-Challenge	32.23	6.02	198	–.45	14.71 to 44.18
Ego-Strength	42.81	5.98	197	–.71	21 to 55
Actual:Ideal	.03	3.41	195	–.04	–10 to 9
Actual:Ought	–.71	2.93	194	.24	–10 to 8
Role Conflict	8.97	5.07	190	.27	0 to 24
Self-Inconsistency	55.20	26.43	184	.05	0 to 114
Self-Complexity	2.41	0.68	197	.17	0.89 to 4.74
Ambivalence	2.75	1.18	194	.72	0 to 6
Agitation	2.98	0.80	194	.13	1.17 to 5
Dejection	0.57	0.43	197	1.03	0.09 to 2.09

As recommended by Anderson and Gerbing (1988), we applied unit variances to all factors by setting each latent variance to 1.0. When specifying the measurement model, this strategy is preferred to one in which an observed variable is assigned arbitrarily to be the metric for a particular latent factor. By setting each latent variance to 1.0, all pattern coefficients (the relations between the observed and latent variables) can be tested. Examination of each pattern coefficient is more meaningful at this stage than testing whether each factor variance is significantly different from zero. In addition, Anderson and Gerbing recommend that the latent factors be allowed to correlate freely during assessment of the measurement submodel. As discussed earlier, the lack of constraints on the structural parameters during this phase reduces the potential for interpretational confounding. Finally, given that Self-Complexity was specified to have a single indicator, we set the variance of the self-complexity measure to $.1s^2_x$ and its pattern coefficient to $.95s_x$—an approach considered to be a conservative method for acknowledging and incorporating measurement error for single-indicator latent constructs (Jöreskog & Sörbom, 1993).

TABLE 2: Bivariate Correlations Among All Measures ($N = 168$)

Measure	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Ego-Resiliency	—													
2. Ego-Undercontrol	.27***	—												
3. PVS-Control	.41***	.20*	—											
4. PVS-Commitment	.48***	.07	.53***	—										
5. PVS-Challenge	.32***	.32***	.31***	.31***	—									
6. Ego-Strength	.43***	.19*	.32***	.25***	.20**	—								
7. Actual:Ideal	–.36***	–.09	–.24**	–.27***	–.15	–.30***	—							
8. Actual:Ought	–.28***	.03	–.18*	–.27***	–.08	–.18*	.58***	—						
9. Role Conflict	–.21**	–.02	–.17*	–.21**	–.24**	–.29***	.16*	.03	—					
10. Self-Inconsistency	–.06	–.13	–.09	–.09	–.28***	–.14	–.04	–.04	.13	—				
11. Self-Complexity	.00	.10	–.09	–.04	.13	–.05	–.07	–.02	–.08	.01	—			
12. Ambivalence	–.14	.09	–.19**	–.16*	–.07	–.22**	.25**	.20**	.05	–.04	.01	—		
13. Agitation	–.47***	–.05	–.23**	–.13	–.17*	–.47***	.24**	.12	.20**	.09	.05	.23**	—	
14. Dejection	–.50***	–.08	–.41***	–.47***	–.16*	–.42***	.26***	.14	.31***	.04	.13	.26***	.53***	—

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

We tested this measurement model using Lisrel8 (Jöreskog & Sörbom, 1993) and used the Comparative Fit Index (CFI) (Bentler, 1990) and the Root Mean Square Error of Approximation (RMSEA) (Steiger & Lind, 1980) to assess model fit. We chose these specific fit indices because they are complementary, that is, they each reflect a unique and important property of overall model fit. Chi-square statistics (which we also report) are heavily influenced by sample size, and a substantively trivial difference between an observed and a predicted covariance matrix can produce a significant chi-square when the sample size is large. The CFI is an incremental fit index that is robust to changes in sample size while remaining sensitive to model misspecification (Marsh, Balla, & Hau, 1996). The CFI yields a value between 0 and 1, with values greater than .90 generally interpreted as indicators of good overall fit (Bentler & Bonnett, 1980; Hoyle & Panter, 1995). The RMSEA takes into account a model's complexity by assessing the lack of fit per degree of freedom. This is a useful control because values for many fit indices (including chi-square and the CFI) can only increase as more parameters are added to a model. An RMSEA value that is not significantly different from .05 indicates a well-fitting model (Browne & Cudeck, 1993).

The initial measurement model provided an inadequate fit to the data, $\chi^2(122, N = 168) = 226.28$, $p < .001$, CFI = .88, RMSEA = .072, $p < .010$. Examination of the pattern coefficients and standardized residuals suggested that relations between self-inconsistency and Permeability, role conflict and Elasticity, and PVS control and PVS challenge were underrepresented by this model. When these three paths were added (and nonsignificant paths from Self-Discrepancy to self-inconsistency and Self-Discrepancy to role conflict were removed), a well-fitting measurement model resulted, $\chi^2(121, N = 168) = 185.31$, $p < .001$, CFI = .92, RMSEA = .056, $p < .250$ (90% CI = 0.039, 0.072). Figure 1 displays the standardized estimates for this model.

As can be seen in Figure 1, several of the interfactor correlations were high. We examined whether each pair of latent factors could be treated as a single construct by setting each correlation to 1.0 and comparing the constrained model to the original model in which the correlation was free to vary (Bagozzi & Phillips, 1982). These tests were performed separately for each pair of latent constructs (Anderson & Gerbing, 1988). Chi-square difference tests indicated that each latent correlation was significantly different from 1.0 (all ps $< .05$).

Summary of Stage 1 analyses. The data were consistent with a six-factor structure; however, several of the pattern coefficient estimates deviated from the hypothesized model. The measures of self-regulation included in this study had a two-factor structure consistent with past theorizing (J. Block, 1971; J. H. Block & Block, 1980). One factor was consistent with Elasticity and was represented by ego-resiliency, ego-strength, and the control and commitment components of hardiness. In addition, role conflict, which we introduced as a self-structure variable, loaded on this factor. A second factor was consistent with Permeability and was represented by ego-undercontrol and the challenge component of hardiness. Self-inconsistency, a self-structure variable, also loaded on the Permeability factor. The measures selected to represent self-structure were characterized by two factors. Actual:ideal self-discrepancy, actual:ought self-discrepancy, and self-attitude ambivalence loaded strongly on the Self-Discrepancy factor. Self-complexity was the sole indicator of the Self-Complexity factor. Finally, the item parcels we constructed to represent Agitation and Dejection loaded strongly on the appropriate factors.

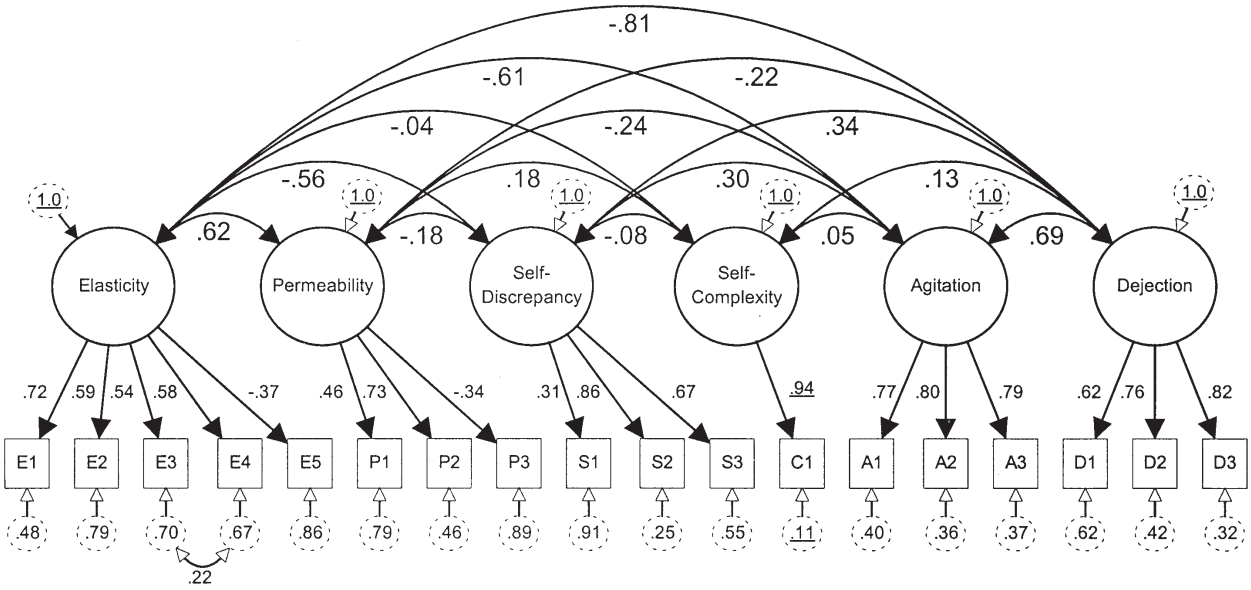

Figure 1 Measurement model: Standardized maximum likelihood estimates for six-factor model.
NOTE: E1 = ego-resiliency, E2 = ego-strength, E3 = control (hardiness), E4 = commitment (hardiness), E5 = role conflict, P1 = ego-undercontrol, P2 = challenge (hardiness), P3 = self-inconsistency, SD1 = self-attitude ambivalence, SD2 = actual:ideal self-discrepancy, SD3 = actual:ought self-discrepancy, SC1 = self-complexity, A1-A3 = agitation item parcels, D1-D3 = dejection item parcels. Numbers in italics represent fixed values.

STEP 2: STRUCTURAL MODEL

We focused next on the pattern of structural relations among these six latent dimensions. We tested a series of models that would examine whether the self-structure dimensions accounted for variance in emotional distress above and beyond the self-regulatory dimensions (see Figure 2). Model 1 represents a partially mediated model in which each self-regulatory dimension is specified to have direct effects on perceived emotional distress in addition to indirect effects through the self-structure dimensions. Model 2 represents a fully mediated model in which all relations between the self-regulatory dimensions and perceived emotional distress are mediated by the self-structure dimensions. Finally, Model 3 represents a nonmediated model in which each self-regulatory dimension is specified to have a direct effect on self-structure and perceived emotional distress, but no mediation is specified. The partially mediated model is the least constrained model, and the fully mediated and nonmediated models are each nested within this model. Therefore, a chi-square difference test can be used to determine whether there is a significant difference between the fit of the partially mediated model (Model 1) and fully mediated model (Model 2): This will indicate whether direct paths from the self-regulatory dimensions to the emotional distress dimensions improve model fit (and thus, whether the self-regulatory dimensions represent unique sources of variance in the prediction of emotional distress). Likewise, the chi-square difference test between the partially mediated model (Model 1) and the nonmediated model (Model 3) will indicate whether direct paths from the self-structure dimensions to the emotional distress dimensions improve model fit (and thus, whether the self-structure dimensions represent unique sources of variance in the prediction of emotional distress).

In each model, we specified direct relations from the self-related dimensions to Agitation, whereas relations from the self-related dimensions to Dejection controlled for Agitation. The direction of statistical control between Agitation and Dejection in these models was arbitrary and (like all statistical associations in these analyses) should not be interpreted as a statement about causal inference. Instead, it represents a strategy for representing the correlation between the two emotional distress dimensions—a correlation that requires specification.[7, 8]

The partially mediated model (Figure 2, Model 1) fit the data well, $\chi^2(121, N = 168) = 188.16$, $p < .001$, CFI = .92, RMSEA = .058, $p < .210$ (90% CI = 0.041, 0.073), as would be expected given that this model has the same degrees of freedom as the measurement model in Figure 1. However, Model 1 contained several nonsignificant structural paths, suggesting that one or both of the less constrained (more parsimonious) models might fit the data just as well.

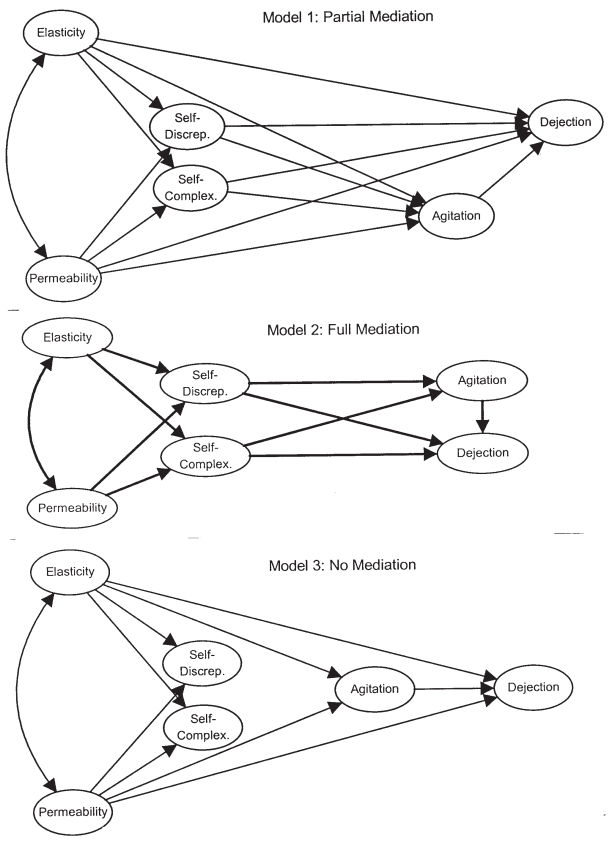

Figure 2 Sequence of three structural models.

The fully mediated model (Figure 2, Model 2) did not fit the data adequately, $\chi^2(125, N = 168) = 237.56$, $p < .001$, CFI = .87, RMSEA = .073. In fact, the overall fit of this model was worse than the fit of Model 1, $\chi^2\text{diff}(4, N = 168) = 49.40$, $p < .001$. This finding suggests that one or more of the direct paths from the self-regulatory dimensions to the emotional distress dimensions are needed.

The fit of the nonmediated model (Figure 2, Model 3) was equivalent to that of the partially mediated model (Model 1), $\chi^2\text{diff}(4, N = 168) = 4.01$, $p < .410$, suggesting that direct paths from the self-structure dimensions to the emotional dimensions are not required for adequate fit. Therefore, Model 3 is preferable to Model 1 because it is more parsimonious. Two of the structural paths in Model 3, however, were nonsignificant: the path from Permeability to Self-Discrepancy and the path from Permeability to Agitation. The parameter estimates for this model—with the two nonsignificant paths removed—are shown in Figure 3. The fit indices for the modified, nonmediated model (Model 3a) indicated good overall fit, $\chi^2(127, N = 168) = 194.34$, $p < .001$, CFI = .92, RMSEA = .056, $p < .250$ (90% CI = 0.040, 0.072).

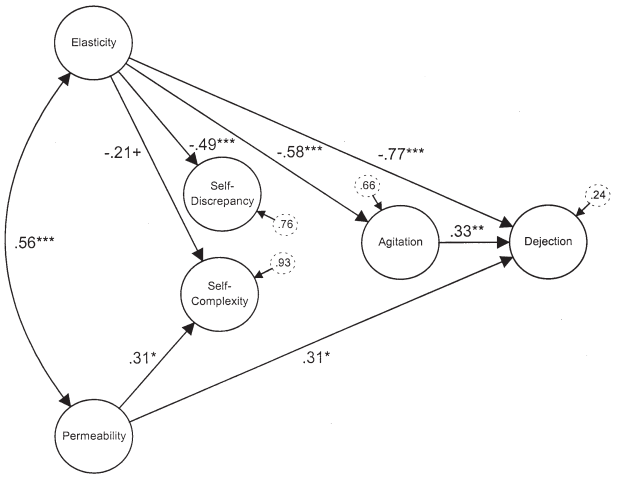

Figure 3 Final structural model (Model 3a) with standardized maximum likelihood estimates for the relations among the latent variables.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

DISCUSSION

Existing psychological theory offers many constructs to reflect the properties of the self that may be related to emotional distress. Our analysis centered on two general classes of these constructs: self-regulatory variables and self-structure variables. The variables we labeled self-regulatory have been developed primarily by personality researchers. These variables characterize the self (ego) as an active agent or executive involved in directing the processing of self-relevant information—the "self-as-process." The specific self-regulatory variables we examined were ego-resiliency, ego-control, ego-strength, and the three subcomponents of hardiness (control, commitment, and challenge). The variables we labeled self-structure have been developed primarily by social-cognitive researchers. These variables emphasize the organization of, and relations between, attributes within the self-concept. The specific self-structure variables we examined were self-complexity, self-discrepancy, self-consistency, role conflict, and self-attitude ambivalence.

Our first goal was to classify these self-regulatory and self-structure measures into a reduced set of empirical dimensions. That is, we were interested in the broader self-related domains shared by these specific measures. The SEM results from Step 1 suggested that these 12 measures can be represented by four latent factors: (a) Elasticity (ego-resiliency, ego-strength, control, commitment, and low role conflict), (b) Permeability (ego-undercontrol, challenge, and self-inconsistency), (c) Self-Complexity (H statistic derived from Linville's card-sorting task, and (d) Self-Discrepancy (actual:ideal self-

discrepancy, actual:ought self-discrepancy, and self-attitude ambivalence). The six indicators of emotional distress we included in the study were represented by two additional dimensions: Agitation and Dejection.

Our second goal was to test a series of models examining the degree to which the self-regulatory dimensions (Elasticity and Permeability) and the self-structure dimensions (Self-Discrepancy and Self-Complexity) predicted perceived emotional distress. These analyses (Step 2 of our SEM approach) indicated that Elasticity and Permeability, but not Self-Discrepancy and Self-Complexity, accounted for unique variance in the prediction of perceived emotional distress. Findings from both steps of these analyses have important theoretical implications regarding the self and its relation to distress.

ELASTICITY OF THE SELF

Ego-resiliency, ego-strength, and the control and commitment components of hardiness loaded heavily on a factor we labeled Elasticity. This factor represents the degree to which a person adapts to adversity, is sensitive to contextual constraints, and perseveres through demanding or traumatic situations. A self-structure variable, role conflict, also loaded (negatively) on this dimension. This measure assesses the degree of discord among a person's separate role-based selves. The four other indicators of Elasticity assess a generalized or global tendency toward adaptive and constructive responses in daily life. Role conflict assesses this aspect of self as well but with specific reference to several important social contexts. Thus, role conflict fits well conceptually under the Elasticity dimension.[9]

Compared to the three other self-related dimensions, Elasticity was particularly influential at both stages of our analysis. First, it represented the largest number of measures in the factor analysis (Step 1). The specific set of measures included in our study, of course, influenced this outcome. However, the fact that several prominent self-related variables—ones derived independently and measured differently—loaded on a single factor suggests that Elasticity may represent a fundamental resilience-promoting property of the self.

Elasticity also was influential in that it shared strong associations with several of the other latent dimensions. As Figure 1 shows, Elasticity was correlated above |.50| with each dimension, with the exception of Self-Complexity. In Step 2, our analysis of alternate structural models indicated that Elasticity was related negatively to emotional distress (both Agitation and Dejection) and that this relation held after controlling for shared variance with the other self-related dimensions (Self-Discrepancy, Self-Complexity, and Permeability). Moreover, relations between Elasticity and the two self-structure dimensions (Self-Discrepancy and Self-Complexity) accounted completely for the relations between these two dimensions and perceived emotional distress.[10] Finally, Elasticity was positively correlated with Permeability, and this correlation contributed to an intriguing pattern of structural relations involving Dejection. We discuss the Permeability dimension below, including this pattern.

PERMEABILITY OF THE SELF

Ego-undercontrol and the challenge component of hardiness loaded on a second factor, which we labeled Permeability. A self-structure variable, self-inconsistency, also loaded (negatively) on this dimension. We interpreted the Permeability dimension as representing the degree to which the self controls versus expresses impulse. This particular combination of indicators (ego-undercontrol, challenge, and self-consistency) suggests a tendency toward approaching rather than withdrawing from situations. A person who is drawn toward persons, events, and activities—who sees novelty as a challenge rather than a threat—may tolerate and even generate diverse self-attributes as he or she pursues multiple or transient goals. That is, a highly permeable person may perceive diverse self-attributes as compatible with one another, as representing a natural outcrop of the larger self-system. On the other hand, persons low in permeability (i.e., overcontrolled persons who see change as threatening) may regard their diverse self-attributes as incompatible or inconsistent with one another, as representing a threat to the integrity of the self.

The structural relations involving Elasticity were compelling. Permeability and Elasticity were strongly and positively correlated. Individually, each of these dimensions was related negatively to Agitation and Dejection (see Figure 1). Analysis of the structural model, however, indicated that Permeability was related positively to Dejection when controlling for Elasticity (see Figure 3). This reversal indicates that Elasticity served as a suppressor variable in the relation between Permeability and Dejection (Tzelgov & Henik, 1991). In our college sample, a characteristically high degree of permeability may be adaptive, especially in social realms (thus the association with Elasticity). Once this adaptive component is accounted for, however, the maladaptive nature of excessive permeability emerges. These patterns highlight the complex relation between ego-control and well-being discussed by J. Block and colleagues (J. Block, 1971; J. H. Block & Block, 1980).

SELF-DISCREPANCY

The two SQ measures (actual:ideal discrepancy and actual:ought discrepancy) and the self-attitude ambiva-

lence measure loaded together on a third factor, which we labeled Self-Discrepancy. The SQ measures represent the discrepancy between a participant's actual characteristics and those characteristics that represent his or her important self-guides. Self-attitude ambivalence, on the other hand, represents the degree to which the self possesses extreme positive and extreme negative attributes simultaneously. Scores on the self-attitude ambivalence measure do not identify the specific self-guides by which the actual self is perceived as extremely positive and/or extremely negative in comparison, and the existence either of extreme positive or extreme negative attributes can be due to either type of self-discrepancy or (more likely) to both types. This being said, we labeled the factor Self-Discrepancy because, as the item loadings in Figure 1 indicate, this dimension primarily represents the two discrepancy scores from the SQ. Self-attitude ambivalence, therefore, plays no role in the subsequent discussion.

Distinct types of self-discrepancy: A supplementary analysis. Consistent with SDT (Higgins, 1987, 1989, 1996a, 1996b; Higgins et al. 1985, 1986, 1997), the Self-Discrepancy dimension was related positively both to Agitation and Dejection. According to SDT, however, there are important distinctions in the emotional consequences of actual:ideal versus actual:ought self-discrepancy. The ideal self serves as a source of goals with a promotion focus, whereas the ought self serves as a source of goals with a prevention focus (Higgins, 1996a). Under a promotion focus, a person strives to obtain positive outcomes. If successfully obtained, promotion-focused goals lead to cheerful emotions, such as happiness and satisfaction. Failure to achieve promotion-focused goals is associated with the absence of positive outcomes and corresponds with dejection-related emotions, such as disappointment or discouragement. Under a prevention focus, a person strives to avoid negative outcomes. If successfully avoided, prevention-focused goals lead to quiescence, or feelings of calm and relaxation. Failure to achieve prevention-focused goals is associated with the presence of negative outcomes and corresponds with feelings of agitation, tenseness, and uneasiness. Higgins and his colleagues have presented correlational and experimental evidence supporting this asymmetry in emotions, which they claim to result from ideal versus ought self-guide discrepancies. In our analyses, the two types of self-discrepancy were represented by a single dimension; thus, these emotion-specific predictions were not examined.

When we did test specifically for the distinct emotional correlates of each self-discrepancy type, we did not replicate the predicted pattern. Results from a series of partial correlations indicated that actual:ideal self-discrepancy correlated uniquely both to dejection ($pr = .22$, $p < .005$) and to agitation ($pr = .21$, $p < .006$), whereas actual:ought self-discrepancy was not a significant unique correlate either of dejection ($pr = -.01$, *ns*) or of agitation ($pr = -.02$, *ns*).

Importantly, the inability to replicate this pattern is not specific to our sample or procedure. Tangney, Niedenthal, Covert, and Barlow (1998) reported a similar inability to replicate the SDT prediction that different types of self-discrepancy would be related to distinct emotions. Closely mimicking the procedures reported by Higgins et al. (1985), Tangney et al. (1998) found that actual:ideal discrepancy was associated uniquely to dejection and agitation, whereas acutal:ought discrepancy was not a significant unique correlate of either type of negative emotion.

Although the distinction between types of self-discrepancy was not a central focus of our research, the popularity of the SQ among social and personality psychologists led us to explore potential differences between actual:ideal and actual:ought self-discrepancy more closely. To do this, we examined the specific CAQ items with which each self-discrepancy type was uniquely correlated, partialing out the other discrepancy type. We chose the CAQ because it represents a comprehensive set of 100 diverse statements reflecting social, affective, cognitive, and behavioral characteristics (J. Block, 1961/1978). The pattern of significant partial correlations is shown in Table 3. Although the sheer number of tests in this analysis makes focusing on specific items problematic, general semantic differences between the two lists reminded us of a theoretical distinction made by Horney (1945).

The patterns in Table 3 are similar to Horney's (1945) description of persons who "move away" from others versus persons who "move against" others as a result of experiencing inner conflict. Actual:ideal discrepancy was related to social anxiety, submissiveness, and a tendency toward overcontrol. This specific type of self-discrepancy, therefore, is linked to social withdrawal (moving away), perhaps as a result of negative affect. Horney characterized this defensive strategy as a person seeking solitude to avoid the "intolerable strain in associating with people" (Horney, 1945, p. 73). On the other hand, actual:ought discrepancy was related to negative interpersonal characteristics and a tendency toward undercontrol. This specific type of self-discrepancy was related to hostility and spitefulness toward others (moving against), suggesting a bitter edge to persons high in actual:ought self-discrepancy. Thus, although we did not support the notion that the actual:ideal and actual:ought subscales of the SQ relate differentially to agita-

TABLE 3: Self-Discrepancy Types and Self-Complexity: Significant Correlations With CAQ Items

Self-Discrepancy Type[a]		
Actual:Ideal	*Actual:Ought*	*Self-Complexity*
25. Tend toward overcontrol of needs and impulses	36. Subtly negativistic; tend to undermine and sabotage	89. Compare myself to others
14. Genuinely submissive	53. Unable to delay gratification	9. Uncomfortable with uncertainty and complexity (–)
9. Uncomfortable with uncertainty and complexities	25. Tend toward overcontrol of needs and impulses (–)	97. Unemotional; emotionally bland (–)
48. Keep people at a distance	83. Able to see to heart of important problems (–)	75. Have a clear-cut, internally consistent personality that is relatively easy to understand and describe (–)
92. Appear socially at ease (–)	12. Tend to be self-defensive	24. Pride self on being rational, logical, objective (–)
57. An interesting, arresting person (–)	73. Perceive many different contexts in sexual terms	30. Give up and withdraw where possible in the face of frustration and adversity (–)
45. Have a brittle ego-defense system	17. Behave in a sympathetic or considerate manner (–)	
49. Basically distrustful of people in general	62. Tend to be rebellious and nonconforming	
10. Anxiety and tension find outlet in bodily symptoms	21. Arouse nurturant feelings in others (–)	
47. Have a readiness to feel guilty		
99. Self-dramatizing		
100. Relate to everyone in the same way (–)		
32. Aware of the impression I make on others (–)		
54. Emphasize being with others; gregarious (–)		
74. Feel satisfied with self (–)		
93. Behave in a gender-appropriate manner (–)		
23. Extrapunitive; tend to transfer or project blame (–)		
15. Skilled in social techniques of imaginative play (–)		
31. Regard self as physically attractive (–)		
6. Fastidious		
84. Cheerful (–)		
44. Evaluate the motivations of others		

NOTE: Items are listed in descending order of the strength of the correlation.
a. Denotes partial correlations, controlling for the other self-discrepancy type.

tion and dejection, we did find them to be related to different self-reported patterns of (poor) social relations.

SELF-COMPLEXITY

The final self-related dimension was Self-Complexity, which was represented by Linville's (1985) measure. When assessing the measurement model, this dimension showed almost no relation to any of the other dimensions (see Figure 1). However, in the final structural model, Self-Complexity was related significantly and positively to Permeability and marginally and negatively to Elasticity. Self-Complexity was not related to emotional distress.

The lack of relation between Self-Complexity and the other dimensions, particularly perceived emotional distress, is not surprising. Indeed, it is consistent with Linville's (1985, 1987) stress-buffering hypothesis. Rather than arguing that self-complexity is a main-effect predictor of emotional and physical distress, Linville proposes that the benefits of self-complexity appear only when a person experiences stressful situations. Self-complexity should have no necessary relation to well-being when a person is stress free. In fact, past research indicates that as a main-effect predictor, self-complexity is unrelated to measures of mood and self-appraisal (Linville, 1985; Niedenthal, Setterlund, & Wherry, 1992; Woolfolk et al., 1995) and that it may be positively correlated with depression (Linville, 1987).

The present study verifies that self-complexity is distinct empirically from other self-related constructs and that it is not a strong main-effect predictor of perceived emotional distress. This study was not designed to test the stress-buffering properties of self-complexity.

Supplementary analyses. The lack of significant bivariate relations between Self-Complexity and the other dimensions prompted the question of whether self-complexity was related to any self-perception variables. Therefore, as with the specific self-discrepancy types, we assessed the correlation between Linville's self-complexity measure and each of the items of the CAQ (see Table 3). These correlations are noteworthy in two

respects. First, the number of statistically significant correlations was very small (6 out of 100). Second, the items that did show a significant relation to self-complexity were consistent with Linville's conceptual definition. Participants with high self-complexity scores indicated being comfortable with complexity, and they considered themselves to have complex self-concepts. These participants also indicated being more emotional and less rational than participants with low self-complexity scores. Finally, high self-complexity participants reported greater frustration-tolerance—a characteristic that is consistent with the stress-buffering hypothesis.

SELF-REGULATION, SELF-STRUCTURE, AND PERCEIVED EMOTIONAL DISTRESS

The findings from the present study indicate that measures of self-regulation and self-structure assess empirically distinct, although related, aspects of self. In addition, self-regulation (particularly elasticity) was more strongly associated with perceived emotional distress than was self-structure. There are at least three possible explanations for this pattern. First, the theoretical link between self-regulation and emotional distress is comparatively direct and straightforward. Second, the measures of self-regulation and emotional distress included in this study may be more similar in that they assess more global constructs than those assessed by the measures of self-structure. Third, the self-regulatory dimensions of elasticity and permeability may influence patterns of self-concept structure in addition to perceived emotional distress. We discuss these three possibilities in greater detail below.

Self-regulatory capacity likely affects both the tendency to experience stressful events and the ability to cope with those negative events that are experienced (see Bolger & Zuckerman, 1995, who apply this argument to personality dimensions). That is, persons with adequate self-regulatory resources can navigate themselves toward trouble-free waters, and when turbulence does occur (e.g., because it was unavoidable or due to an uncharacteristic oversight), persons proficient in self-regulation adopt coping strategies that support a successful resolution. As a consequence, they should be less likely to suffer emotional distress than should persons who lack self-regulatory capacity.

Unlike self-regulation, the theoretical link between self-structure and distress is not so direct. This is especially true for self-complexity. We have highlighted already Linville's (1985, 1987) contention that self-complexity is a moderator (rather than a direct predictor) of emotional experience. Other researchers have argued that patterns of self-structure reflect (rather than determine) affective intensity (Larsen & Diener, 1987). Consistent with this notion, Emmons and King (1989) demonstrated that emotionally intense persons strive for a highly differentiated (complex) set of personal goals. These researchers concluded that a highly differentiated self-concept could result from efforts to maximize emotional experience. In short, self-regulation is widely regarded as a causal antecedent to emotional distress; however, the structure of the self-concept (particularly self-complexity) may be a byproduct of emotional processes.

Aspects of self-regulation and self-structure also differ in the specificity with which they are conceptually related to emotional distress. Measures of self-regulation typically assess more global constructs than do measures of self-structure. Elasticity (a self-regulation construct) and self-discrepancy (a self-structure construct) provide a clear example. Measures of elasticity (e.g., ego-resiliency and ego-strength) were developed to assess general tendencies that apply across situations. Self-discrepancies, on the other hand, reflect a small (albeit important) set of specific goals. Thus, self-discrepancies may be important micropredictors of emotional response, whereas elasticity may be related to a more characteristic, or dispositional, level of distress. If so, specific self-discrepancies would be better than global elasticity measures when predicting emotions within more contextualized settings. For example, a person's emotional response to failure or success is more extreme in the context of strong self-related goals than in the context of weak goals (Higgins et al., 1997). It is possible, therefore, that self-discrepancy measures that incorporate goal strength would be better predictors of emotional response in the context of that goal than would more general measures, such as ego-strength or ego-resilience. As global predictors of emotional distress, however, researchers may want to consider measures of elasticity over measures of self-discrepancy, especially given the labor-intensive nature of self-discrepancy measurement using the SQ.

Finally, it is possible that individual differences in self-regulation (elasticity and permeability) contribute to both perceived emotional distress and self-concept structure. Our finding that self-structure (particularly self-discrepancy) was related to distress and that self-regulation (particularly elasticity) accounted for this relation is consistent with this notion. That is, self-regulation may account for the relation between self-structure and distress because it influences them both. Such statements about causal relations are entirely speculative, and future research would be needed to address them. But, we regard this causal sequence as plausible, if not probable, based on past theory and recent empirical evidence.

According to J. H. Block and Block (1980), elasticity and permeability reflect the characteristics of psycho-

logical boundaries separating what Lewin (1935) termed the need system (where motives originate) and the sensorimotor system (where behaviors are produced in response to the situation-as-perceived). Highly elastic persons are able to adapt to situational constraints and to overcome obstacles in the pursuit of important goals. Therefore, it seems reasonable that these persons would behave in accordance with their self-guides (i.e., be low in self-discrepancy), which would correspond with positive emotional experience. Self-discrepancies, in effect, reflect failed or incomplete attempts at self-regulation. Thus, persons with adequate self-regulatory capacity should generate few self-discrepancies.

Recent empirical work on the relation between stress, vulnerability, and self-structure also supports the notion that self-regulation may contribute to patterns of self-structure (Showers et al., 1998). These researchers report that resilient persons systematically restructured their beliefs about the self when they confronted stressful events. For example, increases in self-complexity accompanied stressful situations and buffered the negative effects of these situations only if the content of the self was largely positive. Thus, restructuring the self-concept may be an adaptive response to stress—one that is used more effectively by emotionally resilient than by emotionally vulnerable persons.

CONCLUSION AND FUTURE DIRECTIONS

Although previous research has demonstrated that self-related variables are useful predictors of perceived emotional distress, individual studies typically have focused on a small number of these variables. By examining measures from several diverse perspectives simultaneously, the present analysis provides conceptual and empirical coherence to an increasingly fragmented area of research. Our findings suggest that self-regulatory aspects of self (elasticity and permeability) may be better indicators of chronic levels of emotional distress than are self-structure aspects of self (self-discrepancy and self-complexity). The potential for self-structure measures to be linked closely to emotional response in more specific contexts, such as at different levels of distress and in response to specific self-goals, remains a viable possibility. To address this possibility (as well as issues of causality), future research should examine the ability for self-regulatory and self-structure dimensions to moderate stress reactions in naturalistic and experimental settings. Additional measures of self-regulation (e.g., sensation-seeking) (Zuckerman, 1979) and self-structure (e.g., self-concept clarity) (Campbell et al., 1996) also should be assessed. Finally, researchers should consider the level of generality at which self- and emotion-related constructs are measured because this may determine the degree to which specific aspects of self are related to specific emotional responses.

APPENDIX
Perceived Emotional Distress Items

Dejection Items

I am so sad and unhappy that I can't stand it (BDI).
I feel that the future is hopeless and that things cannot improve (BDI).
I feel that I am a complete failure as a person (BDI).
I am dissatisfied with everything (BDI).
I feel down-hearted, blue, and sad (SRD).
I felt that I could not shake off the blues even with help from family or friends (CESD).
I felt depressed (CESD).
I thought my life had been a failure (CESD).
I was happy (CESD).[a]
I enjoyed life (CESD).[a]
I felt sad (CESD).

Agitation Items

Is relaxed, handles stress well[a]
Can be tense
Worries a lot
Is emotionally stable, not easily upset[a]
Remains calm in tense situations[a]
Gets nervous easily

NOTE: BDI = Beck Depression Inventory, SRD = Self-Rating Depression Scale, CESD = Center for Epidemiological Studies—Depression.
a. These items were reverse-scored.

NOTES

1. Although we focus exclusively on self-related predictors of perceived emotional distress, we readily acknowledge the relevance of other intrapsychic and extrapsychic variables. Intrapsychic variables include the personality dimensions of optimism (Dember & Brooks, 1989; Scheier, Carver, & Bridges, 1994) and extraversion (Emmons & Diener, 1985). Extrapsychic influences include social support and life stress (Abbey & Andrews, 1985; Cohen & Wills, 1985; Suls & Harvey, 1996).

2. These two dimensions (elasticity and permeability) are nearly synonymous with the ego-resiliency and ego-control dimensions delineated by J. Block and his colleagues (J. Block, 1971; J. H. Block & Block, 1980). We chose not to label the two dimensions as "ego-resiliency" and "ego-control" because these terms refer to specific measures developed from a specific theoretical perspective. Instead, we have borrowed from J. Block (and indirectly from Lewin) the more generic terms of elasticity and permeability. It is also important to note that the measures within each dimension are not necessarily identical or interchangeable.

3. The multiple uses of the term "control" may be confusing to readers. The hardiness control component refers to a subjective sense of control over (or influence on) life events and their outcomes. Ego-control, as defined by J. H. Block and Block (1980), refers to the permeability of boundaries separating regions within the self-system. Thus, the control component of hardiness reflects one's perceived control over external life events, whereas ego-control reflects one's perceived control over the expression of internal motives and impulses.

4. Although self-discrepancy theory is a theory about self-regulation, measures of self-discrepancy assess what we consider to be a structural property of the self—specifically, the relation between the actual self and important self-guides. This discrepancy (or relation) may have motivational and emotional consequences; however, these consequences are not assessed by self-discrepancy measures per se.

5. We modified slightly the original CAQ items to make them appropriate for first-person rather than the third-person description.

6. Showers (1992) and Woolfolk, Novalany, Gara, Allen, and Polino (1995) describe alternative strategies for scoring participants' free sorts. However, for the purposes of the present study, we chose to preserve the self-complexity measure in its original and most widely used form.

7. We repeated the analysis controlling for the effects of Dejection on Agitation. The sole difference between the two analyses was that the direct effect of Elasticity on Agitation was not significant when controlling for Dejection.

8. We also repeated the analyses using multiple measures of depression, subjective well-being, neuroticism, self-esteem, and loneliness in their original forms. These analyses did not alter our conclusions. Within each analysis, the self-regulation dimensions completely accounted for any relation between the self-structure dimensions and the outcome dimension.

9. Role conflict also is distinct from the other measures of elasticity in that perceived conflict may be the result of distress (in addition to being a contributor to it). Therefore, the analyses were repeated in full without role conflict included, and the results were unaffected.

10. These analyses should not be interpreted as a test of competing causal models. We used SEM techniques, and compared models with direct and indirect effects, only in an effort to assess patterns of shared variance among these measures. It is well-known that the ability to make inferences about causality derives from the experimental design employed, not from the statistical procedures used to analyze the data. In addition, conclusions about the relative importance of self-regulatory versus self-structure dimensions in predicting perceived emotional distress should not (and do not) change when the direction of the arrows is reversed. Likewise, treating the self-structure dimensions, rather than the self-regulation dimensions, as exogenous variables (i.e., placing them to the far left in the models) does not alter our conclusions.

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