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What is This?

Self-Awareness and the Emotional Consequences of Self-Discrepancies

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Several self theories explore the effects of discrepant self-beliefs on motivation and emotion. This research intersected two self theories: self-discrepancy theory and objective self-awareness theory. Self-discrepancy theory predicts that ideal and ought discrepancies cause different negative emotions; objective self-awareness theory predicts that high self-awareness will strengthen the relationship between self-discrepancies and emotions. People (N = 112) completed measures of self-discrepancies and emotions (dejection, agitation, positive affect, and negative affect). Self-focused attention was manipulated with a large mirror. When self-awareness was low, self-discrepancies had weak, nonsignificant relations to emotion. When self-awareness was high, however, self-discrepancies strongly predicted emotional experience. These effects were general—ideal and ought discrepancies affected emotions because of their substantial shared variance, not their unique variance. Implications for theories of self-discrepancies and emotions are considered.

Keywords: self-awareness; self-concept; self-focused attention; emotions; self-discrepancy; motivation

The study of the self's role in emotional experience has a long history in social psychology. The earliest "self theories" explored how beliefs about the self, particularly disparities between the self and desired self-states, affected motivation and emotion (Aronson, 1969; Duval & Wicklund, 1972). Interest in how self-beliefs relate to emotional experience remains strong in contemporary research (Leary, 2003; Tesser, 2000). Several modern self theories consider how gaps between the self and some criterion—such as a standard, goal, self-guide, or self-image—affect emotions (Carver & Scheier, 1998; Duval & Silvia, 2001; Higgins, 1987; Ogilvie, 1987). These theories have independently made important contributions to the study of self and emotion, but their intersections remain largely unexplored (see Carver, 1996; Heppen & Ogilvie, 2003).

In this research, we explore some intersections between two of these theories: objective self-awareness (OSA) theory (Duval & Silvia, 2001; Duval & Wicklund, 1972; Silvia & Duval, 2001a) and self-discrepancy (SD) theory (Higgins, 1987, 1999b). Although they have much in common, these theories make some different predictions about the role of discrepant self-beliefs in the experience of emotions. We present an experiment that explores some of their diverging predictions and then consider implications for theories of SDs and emotions (Carver, Lawrence, & Scheier, 1999; Ogilvie, 1987). By illuminating continuities between these theories, we hope to contribute to the integration of what Tesser (2000) has called "the self zoo," the sprawling group of independent self theories.

THEORIES OF SD AND EMOTIONAL EXPERIENCE

OSA theory (Duval & Wicklund, 1972) was one of the first modern theories to consider how discrepancies affect emotions (cf. Freud, 1923). OSA theory assumes that people have representations of the self's features as well as representations of standards that specify features the self ought to have. Standards for the self are assumed to be diverse and idiosyncratic; they are often vague, perfectionistic, unattainable, and inconsistent with other standards (Duval & Silvia, 2001). Duval and Wicklund (1972) asserted that evaluating the self requires focusing on the self. OSA—a state of attention focused on the self—initiates a self-standard comparison

process in which people evaluate the self in relation to relevant standards. Discrepancies from standards generate negative affect (Fejfar & Hoyle, 2000; Mor & Winquist, 2002). This motivates changing the self, changing the standard (Duval & Lalwani, 1999), or avoiding the situation (Moskalenko & Heine, 2003). Whether people constructively change the self versus defensively avoid the situation depends on expectations for improvement (Carver & Scheier, 1998; Silvia & Phillips, 2004) and attributions for failure (Duval & Silvia, 2002; Silvia & Duval, 2001b). Congruity between self and standards generates positive affect, which rewards the action that established congruity (Duval & Silvia, 2001, 2002).

OSA theory has several implications for the relationship between discrepancies and emotions. First, if people do not attend to self–standard discrepancies, then the discrepancy's effects on emotion will be limited. Because activity is more closely aligned with standards when people are self-focused (Carver, 1975; Gibbons, 1978; Hormuth, 1982), the correspondence between discrepancies and emotional experience should be closer when people are objectively self-aware. Second, the theory has been silent about whether different types of discrepancies cause different types of emotions. As a "consistency theory," OSA theory assumes that inconsistency between self and standards creates general negative affect (Duval & Silvia, 2001), akin to the notions of negative affect asserted by balance theory (Heider, 1958) and cognitive dissonance theory (Festinger, 1957).

SD theory (Higgins, 1987; Higgins, Klein, & Strauman, 1985), another theory of discrepancies and emotion, posits three domains of the self: actual, ideal, and ought. The actual self is the person's representation of who he or she is currently. The ideal self is the representation of who he or she would like to become, such as wishes and aspirations for the self. The ought self is the representation of who a person feels he or she should become, such as duties and obligations for the self. Discrepancies between the actual and ideal selves cause dejected emotions such as depression and sadness; discrepancies between the actual and ought selves cause agitated emotions such as anxiety and tension (Higgins, 1987). SDs vary in magnitude and in accessibility. Chronic and momentary accessibility amplify the relationship between discrepancies and emotions (Higgins, Bond, Klein, & Strauman, 1986).

OSA theory and SD theory have some interesting similarities and differences. Each theory connects emotional experience to disparities between the self's present features—the self in OSA theory, the actual self in SD theory—and criterion states for the self. Each theory also contains a mechanism that moderates the degree to which discrepancies affect emotion and activity. In OSA theory this mechanism is self-focused attention; in SD theory it is the accessibility (chronic or momentary) of the discrepancy. These mechanisms have much in common, given the role of attention in cognitive accessibility. The theories diverge in their notions of how standards relate to emotions. OSA theory views standards as enormously diverse, but it has not considered types of standards. SD theory, in contrast, categorizes standards as ideal or ought selves. Furthermore, OSA theory has had little to say about types of negative emotions, whereas SD theory assumes unique relationships between types of discrepancies and negative emotions.

DISCREPANCIES AND EMOTIONS

The most salient difference between the two theories is SD theory's prediction regarding unique relations between ideal and ought selves and dejection and agitation. Indeed, SD theory is best known for this prediction. Researchers in diverse areas of psychology have found support for SD theory's predictions (e.g. Boldero & Francis, 1999, 2000; Higgins et al., 1985, 1986; Higgins, Shah, & Friedman, 1997; Strauman & Higgins, 1987, 1988; for reviews see Boldero & Francis, 1999, 2000; Higgins, 1987, 1999a, 1999b). For example, in an early test of SD theory, Higgins and colleagues (1986, Experiment 2) primed ought and ideal discrepancies in participants high or low in both types of discrepancies. People with large SDs were more agitated in the ought-self priming condition and more dejected in the ideal-self priming condition. The results supported the theory's predictions and demonstrated the role of discrepancy type, magnitude, and accessibility as moderators (cf. Boldero & Francis, 2000).

As research has accumulated, some researchers have expressed reservations about the extent of support for SD theory's predictions. First, the discriminant validity of ideal and ought discrepancies has been questioned (Ozgul, Heubeck, Ward, & Wilkinson, 2003; Tangney, Niedenthal, Covert, & Barlow, 1998). Studies routinely find high correlations between ideal and ought discrepancies, typically over .50 and often as high as .80. In their multimethod study, Tangney and her colleagues (1998) found that ideal and ought discrepancies overlapped substantially; they concluded that there was "very little unique variance in the quantitative estimates of these concepts" (p. 265). Gonnerman, Parker, Lavine, and Huff (2000) conducted a latent variable analysis of SDs and emotional experience. They did not estimate unique effects of ideal and ought discrepancies, however, because the discrepancy types were too highly cor-

related. Instead, ideal and ought discrepancies each indicated a latent SD variable.

Second, the predicted relations between discrepancies and emotions were only partially supported in several studies. For example, ideal and ought discrepancies did not differentially predict depression and anxiety (Bruch, Rivet, & Laurenti, 2000), as specified by the tripartite model (Clark & Watson, 1991). Ideal discrepancies predicted depressive distress and anhedonia—two markers of depression—but ought discrepancies also predicted depressive distress and anhedonia. Neither type of SD predicted agitation. In a structural model of self aspects and emotional distress (Gramzow, Sedikides, Panter, & Insko, 2000), ideal discrepancies predicted both dejection and agitation, whereas ought discrepancies predicted neither emotion. Carver et al. (1999) found that the ideal self (controlling for ought and feared selves) predicted depression. The ought self (controlling for ideal and feared selves) only predicted agitation when people were far from their feared self. Similarly, Heppen and Ogilvie (2003) found that ideal-self discrepancies predicted dejection, but ought-self discrepancies predicted agitation only when people were far from their undesired self.

Third, the unique relationships between ideal discrepancies and dejection and ought discrepancies and agitation have not appeared in at least two studies. Tangney et al. (1998) found that ideal and ought discrepancies predicted both agitation and dejection. Their findings appeared for a large sample, for several measures of discrepancies, and for validated emotion scales. Furthermore, their literal replication of the classic study by Higgins et al. (1985) failed to replicate its findings. When unique effects of ideal and ought discrepancies were estimated, small and largely nonsignificant correlations appeared—this suggests that the effects of discrepancies stem from their shared variance. Using two measures of self discrepancies, Ozgul et al. (2003) found few unique relationships between ideal discrepancies and dejection and ought discrepancies and agitation. Instead, each discrepancy predicted all negative emotions.

INTERSECTING OSA THEORY AND SD THEORY

The presence of supportive and unsupportive findings suggests that researchers should explore moderating variables. Higgins (1999b) and Boldero and Francis (2000) contended that research should not consider SDs in terms of invariant main effects. For example, Higgins suggested that a discrepancy's accessibility, magnitude, contextual relevance, and importance moderate the relationship between discrepancies and affect. The next step in SD research is to identify variables that moderate SD theory's predictions. Finding moderating variables, interactive processes, and boundary conditions enriches a theory and enhances a field's understanding of the dynamics of psychological processes.

The present experiment thus examines self-awareness as a moderator of SD theory's predictions. As noted earlier, OSA theory and SD theory make similar assumptions about the mechanisms of self-evaluation. OSA theory traces self-evaluation to the state of self-focused attention; SD theory traces self-evaluation to the accessibility of a discrepancy. This unappreciated continuity between the theories suggests that self-awareness may moderate SD effects. Focusing attention on the self greatly heightens the accessibility of self-relevant information (Eichstaedt & Silvia, 2003; Hull, Van Treuren, Ashford, Propsom, & Andrus, 1988) and the accessibility of self-standard discrepancies (Carver, 1975; Gibbons, 1990; Ickes, Wicklund, & Ferris, 1973). High self-focus also increases the motivation to be congruent with standards, thereby amplifying the motivational and emotional consequences of self–standard discrepancies (Hormuth, 1982; Silvia & Duval, 2004; Silvia & Gendolla, 2001). In short, self-awareness can increase the accessibility of a discrepancy as well as the significance of a discrepancy.

After a manipulation of self-awareness, people completed a measure of SDs (Higgins et al., 1997) and several measures of emotional experience. We predicted that self-awareness would moderate the relationship between SDs and negative affect. The alignment of SDs and negative affect should increase as self-awareness increases. If the pattern predicted by SD theory appears, then the correlation between ought discrepancies and agitation and between ideal discrepancies and dejection should be higher when people are self-aware. If the general pattern found by Ozgul et al. (2003) and Tangney et al. (1998) appears, then discrepancies should predict all negative emotions more strongly when self-awareness is high.

METHOD

Participants and Design

A total of 112 students—95 women, 17 men—from general psychology classes at the University of North Carolina–Greensboro (UNCG) participated and received credit toward a research option. All participants were native speakers of English. Each person was randomly assigned to one of two between-subject conditions: *high self-awareness* or *low self-awareness.*

Procedure

As participants arrived for the experiment, they were greeted by a female experimenter who sat them at small tables in private rooms. When the students sat at the table, they faced either the reflective side (high-self-awareness condition) or the backside (low-self-awareness condition) of a large mirror ($24'' \times 36''$). One of the oldest self-awareness manipulations (Carver & Scheier, 1978; Duval & Wicklund, 1973; Wicklund & Duval, 1971), the mirror procedure is widely used in contemporary research (Dijksterhuis & van Knippenberg, 2000; Mullen, Migdal, & Rozell, 2003; Silvia, 2002a, 2002b). The experimenter casually apologized for the condition of the room, explaining that it was being used for several experiments and that the other experimenters had asked that nothing be rearranged. Participants learned that the purpose of the experiment was to gather information about how UNCG students view themselves, and they were asked to complete two questionnaires.

Selves Questionnaire. The first questionnaire was a paper-and-pencil version of the computerized Selves Questionnaire developed and used by Higgins et al. (1997). After reading definitions of actual, ideal, and ought selves, participants wrote five ideal and five ought attributes describing themselves. After listing each attribute, they rated (a) the extent to which they would like to ideally possess it or believed they should possess it, and (b) the extent to which they actually did possess it. Participants completed the questionnaire from their own perspective and from the perspective of someone close to them. Only the self's perspective was analyzed, because SD theory and OSA theory overlap in this domain; OSA theory makes no predictions regarding discrepancies rooted in another person's perspective. The self's perspective always came first, as in past research (Higgins et al., 1997).

Emotions. After the Selves Questionnaire, participants completed measures of emotional experience. One was a measure created by Higgins et al. (1997, Experiment 2). Using a 5-point scale, participants rated how frequently and intensely they had experienced 12 emotions in the past week. Six emotions reflected agitation (agitated, on edge, uneasy, tense, calm, and relaxed), and 6 reflected dejection (disappointed, discouraged, low, sad, happy, and satisfied). Researchers have criticized the use of brief, ad hoc emotion scales in self-discrepancy research (Tangney et al., 1998). We thus included the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), a widely used and well-validated measure of emotions (Schmuckle, Egloff, & Burns, 2002). This scale forms two factors: Positive Affect (PA) and Negative Affect (NA). Low PA reflects depression and dejection, and high NA reflects anxiety and agitation (Clark & Watson, 1991; Watson, 2000; Watson et al., 1995).

RESULTS

Data Reduction

Several variables were calculated for final analyses. Actual-self ratings were subtracted from the ideal-self or ought-self rating for each item to create discrepancies. The five ideal discrepancies were averaged to form an ideal-discrepancy score, and the five ought discrepancies were averaged to form an ought-discrepancy score. Agitation and dejection scores were calculated by averaging the intensity and frequency ratings for the six items in each scale, after reverse scoring as needed. We also computed a negative affect score by averaging agitation and dejection. PA and NA scores were formed as in past research with the PANAS (Watson et al., 1988). Table 1 displays the estimates of internal consistency and the descriptive statistics for all measures.[1]

Relations of Ideal and Ought Discrepancies With Dejection and Agitation

Did self-awareness affect the relationship between SDs and emotional experience? SD theory predicts that ideal discrepancies will predict dejection and ought discrepancies will predict agitation. OSA theory predicts that discrepancies will covary more strongly with emotions when self-awareness is high. Table 2 displays the effects of the self-awareness manipulation on the zero-order correlations between discrepancies and emotions; Figure 1 illustrates the pattern of relationships.

Within-condition effects. We first tested whether the relationships between discrepancies and emotions differed significantly from zero within the low- and high-self-awareness conditions. As predicted by OSA theory, the relationships between discrepancies and emotions were clearly stronger when self-awareness was high. In the low-self-awareness condition (shown above the diagonal in Table 2), ideal and ought discrepancies had nearly no significant correlations with emotional experience—only 1 of 10 correlations was significant. Neither ideal nor ought discrepancies predicted dejection, agitation, negative affect, or PA. The only significant effect was a correlation between ought discrepancies and NA.

In the high-self-awareness condition (shown below the diagonal in Table 2), in contrast, both ideal and ought discrepancies significantly predicted a broad range of emotions—9 of 10 correlations were significant. Each discrepancy type significantly correlated with dejection, agitation, and negative affect. For the PANAS scales, ideal and ought discrepancies both predicted low PA, and ought discrepancies predicted NA.

TABLE 1:   Descriptive Statistics

	Low Self-Awareness			High Self-Awareness			Overall			
	M	SD	95% CI	M	SD	95% CI	M	SD	95% CI	α
Ideal discrepancies	1.89	0.75	1.68 - 2.09	2.03	0.87	1.79 - 2.26	1.96	0.82	1.80 - 2.11	.69
Ought discrepancies	1.79	0.71	1.59 - 1.98	1.80	0.85	1.58 - 2.03	1.79	0.78	1.65 - 1.94	.67
Overall discrepancies	1.84	0.61	1.67 - 2.00	1.92	0.79	1.71 - 2.12	1.88	0.70	1.75 - 2.01	.78
Dejection	2.41	0.56	2.26 - 2.56	2.36	0.66	2.18 - 2.53	2.38	0.61	2.27 - 2.49	.79
Agitation	2.52	0.49	2.38 - 2.65	2.62	0.73	2.42 - 2.81	2.57	0.63	2.45 - 2.68	.74
Negative affect	2.46	0.47	2.34 - 2.59	2.49	0.66	2.31 - 2.66	2.47	0.57	2.37 - 2.58	.85
PANAS-PA	3.45	0.58	3.29 - 3.60	3.43	0.58	3.28 - 3.59	3.44	0.58	3.33 - 3.55	.78
PANAS-NA	2.35	0.68	2.17 - 2.54	2.34	0.76	2.14 - 2.54	2.35	0.72	2.21 - 2.48	.82

NOTE: CI = Confidence Interval; PANAS = Positive and Negative Affect Schedule; PA = Positive Affect; NA = Negative Affect; N = 112 (55 in the low-self-awareness group, 57 in the high-self-awareness group); overall discrepancies is the average of ideal and ought discrepancies; negative affect is the average of dejection and agitation.

TABLE 2:   Correlations Between All Variables as a Function of Self-Awareness

	1	2	3	4	5	6	7	8
1. Ideal discrepancies		.38	.84	.08	.00	.05	−.07	.10
2. Ought discrepancies	.65		.82	.19	.08	.15	−.13	.28
3. Overall discrepancies	.91	.90		.16	.04	.12	−.12	.23
4. Dejection	.32	.36	.37		.55	.89	−.33	.54
5. Agitation	.31	.33	.35	.77		.86	−.27	.42
6. Negative affect	.33	.37	.39	.93	.94		−.34	.55
7. PANAS-PA	−.37	−.30	−.37	−.23	−.07	−.16		.06
8. PANAS-NA	.10	.27	.20	.69	.68	.72	.09	

NOTE: PANAS = Positive and Negative Affect Schedule; PA = Positive Affect; NA = Negative Affect. Correlations above the diagonal reflect low self-awareness (n = 55), and correlations below the diagonal reflect high self-awareness (n = 57). Overall discrepancies is the average of ideal and ought discrepancies; negative affect is the average of dejection and agitation. Coefficients greater than .26 are significant, $p < .05$; coefficients greater than .35 are significant, $p < .01$.

Between-condition effects. The within-condition effects indicated that the relations between discrepancies and emotions depended on self-awareness. In the low-self-awareness condition, only 1 of 10 correlations differed from zero; in the high self-awareness condition, 9 of 10 correlations differed from zero. We thus turned to testing if the correlations differed between conditions. Confidence intervals around *r*, shown in Table 3, were computed to test whether these relationships differed significantly between self-awareness conditions. Following our directional predictions (i.e., self-awareness will amplify the relationships), the confidence intervals indicate one-tailed tests of differences between independent correlations.

For ideal discrepancies, four of the five correlations were significantly different. The high-self-awareness condition had significantly stronger relations for dejection, agitation, negative affect, and PA; the groups did not differ in the relation between ideal discrepancies and NA. For ought discrepancies, a similar but weaker pattern appeared. The high-self-awareness condition had significantly stronger relations for agitation and

negative affect; the relations for dejection, PA, and NA did not differ. The between-condition analyses thus converged with the within-condition analyses—self-awareness promoted stronger relationships between discrepancies and emotions.

Exploring Unique Effects of Ideal and Ought Discrepancies

Given high self-awareness, both ideal and ought discrepancies predicted a wide range of emotions at the zero-order level. For a closer look at relations between discrepancies and emotions, we explored whether ideal and ought discrepancies had unique relations to agitation and dejection. SD research commonly controls for the shared variance of ideal discrepancies and ought discrepancies. Yet, sometimes the shared variance is quite high, leaving little unique variance. As noted in the introduction, many studies find substantial overlap between ideal and ought discrepancies. For example, Gonnerman et al. (2000) found that ideal and ought discrepancies correlated too highly to allow estimation of unique effects, and Tangney et al. (1998) found that the

IDEALS

OUGHTS

OVERALL
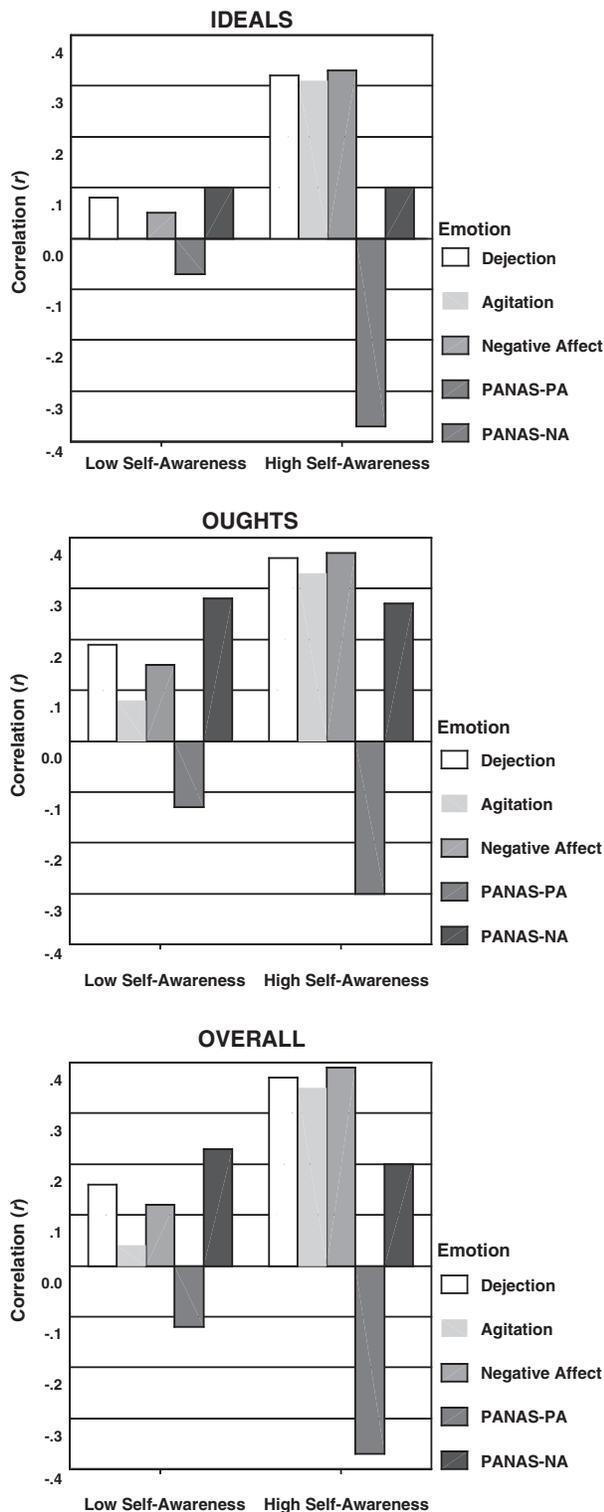
Figure 1   Effects of self-awareness on correlations between types of discrepancies and emotions.
NOTE: PANAS = Positive and Negative Affect Schedule; PA = Positive Affect; NA = Negative Affect.

TABLE 3:   Effects of Self-Awareness on Correlations Between Self-Discrepancies and Emotions

	Low Self-Awareness		High Self-Awareness	
	r	CI	r	CI
Ideal discrepancies				
Dejection	.08	−.15 - .30	.32	.11 - .51
Agitation	.00	−.22 - .22	.31	.10 - .50
Negative affect	.05	−.18 - .27	.33	.12 - .52
PA	−.07	−.29 - .16	−.37	−.55 - −.16
NA	.10	−.13 - .32	.10	−.12 - .31
Ought discrepancies				
Dejection	.19	−.04 - .40	.36	.15 - .54
Agitation	.08	−.15 - .30	.33	.12 - .52
Negative affect	.15	−.07 - .36	.37	.16 - .55
PA	−.13	−.34 - .10	−.30	−.49 - −.09
NA	.28	.06 - .47	.27	.05 - .46
Overall discrepancy				
Dejection	.16	−.07 - .37	.37	.16 - .55
Agitation	.04	−.19 - .26	.35	.14 - .53
Negative affect	.12	−.11 - .33	.39	.19 - .56
PA	−.12	−.33 - .11	−.37	−.55 - −.16
NA	.23	.00 - .43	.20	−.02 - .41

NOTE: CI = Confidence Interval; PANAS = Positive and Negative Affect Schedule; PA = Positive Affect; NA = Negative Affect; N = 112 (55 in the low-self-awareness group, 57 in the high-self-awareness group). Overall discrepancies is the average of ideal and ought discrepancies; negative affect is the average of dejection and agitation. CI = 90% around r, representing a one-tailed test between the low- and high-self-awareness conditions. Note that CIs around r are asymmetrical (see Cohen, Cohen, West, & Aiken, 2003, p. 45).

Selves Questionnaire "essentially taps one big self-discrepancy" (p. 266).

We thus first assessed whether ideal and ought discrepancies formed distinct constructs in our sample. To assess the relation between the discrepancies, we analyzed latent ideal and ought variables using AMOS 4 (Arbuckle & Wothke, 1999; Byrne, 2001). The five observed ideal-discrepancy scores were indicators for a latent ideal discrepancy, and the five observed ought-discrepancy scores were indicators for a latent ought discrepancy. This analysis estimated the covariance between ideal and ought discrepancies, controlling for the unknown measurement error. The latent ideal and ought discrepancies were highly correlated, $\beta = .767$, $p < .001$ ($B = .401$, $SE = .112$, critical ratio [CR] = 3.59). As one would expect, the latent correlation was higher than most of the observed correlations found in past studies. An exploratory factor analysis of the discrepancy scores further suggested substantial shared variance. A principal-axis factor analysis (Russell, 2002) of the 10 SD items (5 for ideal discrepancies, 5 for ought discrepancies) found a clear single factor (34% of the variance) according to eigenvalues and scree plots. Factor load-

ings ranged from .41 to .69. In sum, the latent variable analysis and the factor analysis indicated that the measurement, as in past studies, yielded "one big self-discrepancy" (Tangney et al., 1998, p. 266).

The outcomes of multiple regression analyses were consistent with a single underlying discrepancy factor. When self-awareness was low, ideal discrepancies did not predict dejection when considered alone or simultaneously with ought discrepancies (all βs < .18, *ns*), and ought discrepancies did not predict agitation when considered alone or simultaneously with ideal discrepancies (all βs < .09, *ns*). When self-awareness was high, ideal and ought discrepancies predicted emotions when entered alone but not when considered simultaneously. Although ideal discrepancies predicted dejection (β = .32, *p* < .016), neither ideal (β = .14, *p* < .39) nor ought discrepancies (β = .27, *p* < .11) predicted dejection when considered together. Likewise, although ought discrepancies predicted agitation (β = .33, *p* < .013), neither ought (β = .22, *p* < .19) nor ideal discrepancies (β = .17, *p* < .32) predicted agitation when considered together. The regression analyses converge to show that ideal and ought discrepancies predicted emotions with what they share, not with what is unique. This is not a surprise, given (a) the high correlation between latent ideal and ought constructs and (b) the loading of discrepancy scores on a single factor. Ideal and ought discrepancies had little unique variance available for predicting other variables.

Relation of Overall Discrepancy With Emotions

Given the converging evidence for a single discrepancy factor, we aggregated ideal and ought discrepancies to form an overall discrepancy score. If ideal and ought discrepancies predicted emotions by virtue of their shared variance, then aggregating them should result in more reliable estimates of emotion–discrepancy relationships (Epstein, 1990). If they predict emotions by virtue of their unique variance, then aggregating them should weaken these relationships. As before, we assessed both within-condition and between-condition effects. Within the low-self-awareness condition, overall discrepancy scores did not predict any of the emotion scores; none of the five correlations was significant (see Table 2). Within the high-self-awareness condition, in contrast, four of the five correlations were significant. Overall discrepancy scores significantly predicted dejection, agitation, negative affect, and PA; they did not predict NA.

Comparisons of the correlations between conditions converged with the within-condition effects (see Table 3). For four of the five emotion scores—agitation, dejection, negative affect, and PA—the high-self-awareness

group had significantly higher correlations relative to the low-self-awareness group. No difference was found for NA. It is noteworthy that the between-condition effects were more reliable for the overall discrepancy scores than for the ideal or ought discrepancy scores. This further suggests that the shared variance of ideal discrepancies and ought discrepancies underlies the prediction of emotions.

Considering Discrepancy Assessment

This experiment found a high latent correlation between ideal and ought discrepancies (β = .767, *p* < .001), and the relations of SDs to emotions suggested that ideal and ought discrepancies predicted emotions by virtue of their shared variance. One might wonder if these findings are due to idiosyncrasies of measurement. The version of the Selves Questionnaire used in our experiment has not been widely used (see Higgins et al., 1997), and the use of 5 items (instead of 10) may have artificially inflated the correlation between ideal and ought discrepancies. Thus, it is worth considering whether the present findings generalize to other samples and to other measures of SDs.

We can test if the high ideal–ought overlap is a measure-specific effect by examining the relationships between other measures of SDs. A sample of 224 undergraduate students at UNCG completed three measures of ideal and ought discrepancies. The first measure was a version of the Selves Questionnaire developed by Carver et al. (1999). For this scale, people write adjectives describing the ideal self and the ought self and then rate how discrepant the actual self is from the ideal or ought self, using 7-point scales. Carver et al. (1999) point out that unlike the traditional Selves Questionnaire, this version does not require computing difference scores. The second measure was a visual-analog scale of global discrepancy judgments developed by Heppen and Ogilvie (2003). Participants are shown a large circle that represents the ideal self, and they are asked to mark a box that represents how close or far they are from it. This is repeated for the ought self. This measure provides holistic ratings of ideal and ought discrepancies. The third measure was an adjective-rating scale used by Ozgul et al. (2003; see also Tangney et al., 1998). Participants rated the actual, ideal, and ought selves on a list of 60 adjectives, using 7-point scales. Discrepancy scores were computed as the averaged differences between ideal and ought selves and the actual self.

With three measures, one can estimate the latent correlation between ideal and ought discrepancies. By correlating the residual errors according to method (e.g., correlating the residual of ideal-adjective ratings with the residual of ought-adjective ratings), a precise error-

corrected estimate of the relation between discrepancies can be assessed (see Byrne, 2001; Kline, 1998). Using AMOS 4 (Arbuckle & Wothke, 1999), we formed latent ideal and ought discrepancies. The three discrepancy measures defined the indicators for the latent variables, and the residual scores were correlated by method. The latent ideal and ought discrepancies were highly correlated, $\beta = .775$, $p < .001$ ($B = 1.24$, $SE = .228$, $CR = 5.44$). In fact, the standardized estimate in this sample ($\beta = .775$) was essentially identical to the experimental sample ($\beta = .767$).

Thus, we found a strong replication of the relationship between ideal and ought discrepancies—the effect appeared in two independent samples and with four measures of SDs. The high latent correlation between ideal and ought discrepancies replicated in a separate sample that completed three different measures of SDs. This suggests that the findings obtained in our experiment are not due to idiosyncrasies associated with the Selves Questionnaire. Instead, ideal and ought discrepancies appear to share substantial variance, perhaps to the point of measuring "one big self-discrepancy" (Tangney et al., 1998, p. 266).

DISCUSSION

Many self theories consider how discrepancies between the self and standards for the self affect motivation and emotion, yet these self theories have rarely been intersected (see Tesser, 2000). The present research explored the overlap between two self theories: OSA theory (Duval & Silvia, 2001; Duval & Wicklund, 1972) and SD theory (Higgins, 1987; Higgins et al., 1985). In particular, we tested whether self-awareness moderates SD theory's predictions of how ideal and ought discrepancies affect dejection and agitation. SD theory assumes that accessible discrepancies predict emotions more strongly (Higgins, 1987). Self-awareness enhances the accessibility of disparities between self and standards (Hormuth, 1982; Ickes et al., 1973; Sedikides, 1992) and makes discrepancies more self-relevant (Duval & Silvia, 2001, 2002). As a result, it seemed promising as a moderator of SD theory's predictions.

Past research suggested two possible patterns. First, ideal and ought discrepancies could uniquely predict dejection and agitation, as expected from SD theory and found in past research (e.g., Boldero & Francis, 2000; Higgins et al., 1985, 1986, 1997; Strauman & Higgins, 1987, 1988). Alternatively, both types of discrepancies could generally predict negative emotions, as found in recent studies (Gramzow et al., 2000; Ozgul et al., 2003; Tangney et al., 1998). In the present experiment, self-awareness clearly strengthened the alignment of discrepancies and emotions. The alignment, however, was general. In the low-self-awareness condition, ideal and

ought discrepancies were essentially unrelated to emotions. In the high-self-awareness condition, in contrast, both ideal and ought discrepancies broadly predicted emotions.

Like other studies (Gonnerman et al., 2000; Tangney et al., 1998), our experiment found substantial overlap between ideal and ought discrepancies. The latent correlation of ideal and ought discrepancies was .77 in two samples. Congruent with the strong shared variance, neither ideal nor ought discrepancies uniquely predicted dejection or agitation in multiple regression analyses. Furthermore, aggregating ideal and ought discrepancies into an overall discrepancy index promoted stronger relationships with emotions. These analyses converge on a clear conclusion—the relations between discrepancies and emotions in our sample were driven by the substantial variance shared by ideal and ought discrepancies.

We should note that this study was designed to examine the intersection of two self theories, not to assess definitively the validity of OSA theory or SD theory. The present experiment found that OSA theory and SD theory have interesting and coherent relationships, and the results suggest productive directions for future research on the continuities between theories in the "self-zoo" (Tesser, 2000). Although this experiment has implications for the validity of SD theory, it remains for future research to conduct more comprehensive evaluations of the theory. Thus far, few studies of SD theory's predictions have had sample sizes of more than 100, more than one measure of SDs, or multiple measures of emotions. Moreover, SD theory's predictions lend themselves to latent variable analysis, yet this has not been undertaken.

Implications for Theories of SDs

The findings of this experiment have several implications for theories of the role of SDs in emotional experience. The most salient implications are for SD theory. Unique relations between types of discrepancies and types of emotions did not appear in this experiment. Instead, the findings replicated experiments that found general effects of discrepancies on negative emotions. As Higgins (1999b) noted, research on SD theory should explore "second generation" questions concerning moderators and boundaries of the theory's effects. In the spirit of this suggestion, this experiment found that self-awareness moderated the link between discrepancies and emotions, although it did not promote unique links between them.

It seems reasonable to conclude that the domain of SD theory, as with most theories in psychology, is becoming more focused as research accumulates. Experiments that support the theory generally have done so in specific circumstances, such as when people have large SDs

that are highly accessible (e.g., Higgins et al., 1986, 1997) or when specific aspects of ideal and ought discrepancies are relevant to the momentary context (Boldero & Francis, 2000). Methodological factors—such as measuring emotions with ad hoc clusters of items (Higgins et al., 1985, 1986; Strauman & Higgins, 1988) versus validated multi-item scales (Bruch et al., 2000; Ozgul et al., 2003; Tangney et al., 1998)—may also play a role. Based on the growing body of work on SD theory, it seems that SD theory's predictions are more circumscribed than expected from the original theory. More research on possible moderators of the links between ideal discrepancies, ought discrepancies, and different negative emotions is needed to clarify the boundaries of SD theory's predictions.

The present findings also have implications for OSA theory. OSA theory assumes that self-focused attention leads to self-evaluation, and that gaps between the self and standards create negative affect (Silvia & Duval, 2004). OSA theory's prediction that self-awareness increases the relationship between SDs and negative emotions was clearly supported. This adds to the building body of work on the consequences of self-awareness for negative emotions (Mor & Winquist, 2002; Nezlek, 2002) and illustrates the fundamental connection between self-awareness and self-evaluation (see Silvia & Phillips, 2004; Wicklund, 1975). Finding a general connection between discrepancies and emotions is congruent with OSA theory, which has remained agnostic about types of standards and types of negative emotions. Nevertheless, it may benefit OSA theory to move toward greater specificity in its predictions, given that much has been learned about emotions since the original theory was developed (Duval & Wicklund, 1972). For example, the broad PA factor (Watson, 2000) was the strongest correlate of discrepancies in the present study. In general, discrepancies predicted low PA and high dejection (a marker of low PA) most reliably. NA varied inconsistently with self-discrepancies, and it was the only emotion score that self-awareness did not affect. Although preliminary, this provides hints about the emotions that may be most strongly implicated in discrepancies between the self and standards.

Although not the focus of the present research, another important theory of SDs and emotions deserves mention. According to Ogilvie's (1987; Ogilvie & Clark, 1992) undesired-self theory, representations of selves that the person wants to avoid dominate self-regulation. The theory is not committed to unique discrepancies associated with unique negative emotions. Instead, the theory assumes that the undesired self is a stronger guide for self-regulation than has been recognized thus far. Research to date suggests that the undesired self plays a strong role in emotional life (Carver et al., 1999;

Heppen & Ogilvie, 2003). Research on the undesired self reflects the lack of integration of the many self theories (Tesser, 2000). Thus far, the overlap between the undesired-self theory and OSA theory remains unexplored. This research found that self-awareness amplified the relation between discrepancies and emotions. This may also hold true for discrepancies from the undesired self, which resemble the "standards of correctness" emphasized by the original OSA theory (Duval & Wicklund, 1972). It would be worthwhile for future research to intersect the two theories.

NOTE

1. The discrepancy and affect variables were examined for nonnormality, and scatterplots were examined for outliers. Some of the variables deviated from normality. Transforming the distributions did not appreciably affect their relationships, so subsequent analyses used the untransformed values.

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