The Integrated Self-discrepancy Index: A Reliable and Valid Measure of Self-discrepancies

Erin E. Hardin
Department of Psychology
Texas Tech University

Jessica L. Lakin
Department of Psychology
Drew University

This paper presents the Integrated Self-discrepancy Index (ISDI), a new method for measuring self-discrepancies (Higgins, 1987) that integrates idiographic and nomothetic methods to address important theoretical and methodological concerns in existing measures. In Study 1, 284 undergraduate participants completed the ISDI to measure ideal-own and ought-own self-discrepancies, along with measures of dejection, agitation, cheerfulness and quiescence. In Study 2, the ISDI was used to measure ideal and ought self-discrepancies from both own and other standpoints; 169 undergraduate participants completed measures of depressive symptoms and social anxiety approximately one week later. Data from both studies fully support the fundamental predictions of self-discrepancy theory (SDT): Ought self-discrepancies were uniquely related to agitation but not dejection, whereas ideal self-discrepancies were uniquely related to dejection but not agitation. In addition, comparisons to previously-published data demonstrate that correlations between the ideal and ought self-discrepancies are significantly lower using the ISDI than using other measures of self-discrepancies, suggesting that the ISDI is better able to measure ideal and ought selves as distinct constructs. This measure may provide researchers with a simpler and more valid method to measure self-discrepancies, contributing to our understanding of the importance of self-discrepancies in many applied literatures.

Failing to be whom one wants to be does not feel good. This idea is not novel; theorists as far back as William James and Sigmund Freud posited that such self-discrepancies lead to emotional distress (Ogilvie, 1987). Higgins' (1987) self-discrepancy theory (SDT), however, was novel in that it proposed that different types of self-discrepancies produce different types of mood. Specifically, dejection-related emotion results from failing to be the type of person one aspires to be or believes others aspire for one to be (an actual-ideal discrepancy), whereas agitation-related emotion results from failing to be the type of person one feels morally obligated to be by self or others (an actual-ought discrepancy).

Consistent with these predictions, those diagnosed with mood disorders have larger self-discrepancies than those without mood disorders (e.g., Scott & O'Hara, 1993; Weilage & Hope, 1999), clinically depressed subjects have larger ideal self-discrepancies than non-depressed subjects (e.g., Fairbrother & Moretti, 1998; Scott & O'Hara, 1993), and clinically anxious subjects have larger ought self-discrepancies than non-anxious subjects (Scott & O'Hara, 1993). Ideal self-discrepancies also decrease significantly as a function of successful treatment for depression (Strauman et al., 2001). The affective consequences of experiencing ideal and ought self-discrepancies hold for non-clinical samples as well: College students with larger self-discrepancies also report more depressed and anxious moods (e.g., Hardin & Leong, 2005; Higgins, Klein & Strauman, 1985).

The degree to which one perceives oneself as experiencing a self-discrepancy appears to be a relatively stable trait (see Higgins, 1987, and Strauman, 1996, for discussions of the developmental context in which self-discrepancies emerge). In one longitudinal study, Strauman (1996) found that the magnitude of self-discrepancies at Time 1 was significantly correlated with magnitude of self-discrepancies obtained more than three years later. This occurred despite the fact that the specific content of the ideal and ought selves varied over time, with only about 25% of the content being the same three years later.

In the 20 years since SDT was formally articulated, it has generated an impressive body of research: Higgins' seminal 1987 *Psychological Review* article has been cited over 975 times, in eight different languages, across specialties within psychology (e.g., clinical, social, developmental) and disciplines outside of psychology (e.g., business, sociology, political science). The popularity of the theory has not waned; over 170 of these citations have occurred in the past two years. Interest is due in no small part to the theory's many applications to other important literatures: regulatory focus and motivation (Higgins, 1996; Higgins, Shah, & Friedman, 1997; Leonardelli, Lakin, & Arkin, 2007),

individual differences (Amico, Bruch, Haase, & Sturmer, 2004; Hardin, Weigold, Robitschek, & Nixon, 2007; Moretti & Higgins, 1990), leadership (Kark & van Dijk, 2007), job satisfaction (Reich, Wagner-Westbrook, & Kressel, 2007), learning and academic achievement (Maddox, Baldwin, & Markman, 2006; Sideridis, 2006), developmental processes (Imamoglu & Karakitaplu-Aygun, 2006; Manian, Papadakis, Strauman, & Essex, 2006; Zentner & Renaud, 2007), psychological disorders (Fairbrother & Moretti, 1998; Parker, Boldero, & Bell, 2006; Roelofs et al., 2007; Scott & O'Hara, 1993; Strauman et al., 2001; Weilage & Hope, 1999), and health behaviors (Landa & Bybee, 2007; Okun & Karoly, 2007).

Despite some inconsistent findings (e.g., Ozgul, Heubeck, Ward, & Wilkinson, 2003; Tangney, Niedenthal, Covert, & Barlow, 1998), there is substantial evidence from both correlational (e.g., Higgins et al., 1985) and experimental (e.g., Higgins, Bond, Klein, & Strauman, 1986) research for the fundamental predictions of SDT, and researchers have turned their attention to more sophisticated questions about when and why these effects occur. In order to advance our understanding of important theoretical issues related to affective and self-regulatory processes, it is crucial to be able to test SDT in the most reliable and valid way possible. However, different researchers have used vastly different methodologies to measure self-discrepancies, most of which possess significant shortcomings.

Most of the evidence supporting SDT comes from studies that use Higgins' Selves Questionnaire (Higgins et al., 1986; Higgins et al., 1985) to measure self-discrepancies. This idiographic method asks participants to generate lists of up to 10 attributes each for the actual, ideal, and ought selves, from the standpoints of the participant and a significant other, for a total of six self-states (i.e., actual-own, actual-other, ideal-own, ideal-other, ought-own and ought-other). Discrepancies are determined by comparing the attributes listed for each pair of self-representations and computing the difference between the number of matches (same or synonymous words listed in each self-state) and mismatches (opposite words listed in each self-state). The more mismatches, the higher the self-discrepancy score for that pair of self-representations. Participants also rate the extent to which each attribute describes the specific self-state (e.g., for the ideal-own self-state, to what extent does the participant ideally want to possess that trait?) on a 4-point scale from *slightly* to *extremely*. Thus, degrees of match and mismatch can also be computed to further identify self-discrepancies.

Numerous other methods of assessing self-discrepancies have also been used. For example, Tangney et al. (1998) used the Selves Questionnaire and a nomothetic adjective rating task to assess self-discrepancies (i.e., participants rated 60 adjectives for each of the six self-states). However, they failed to find unique relations between ideal self-discrepancies and dejection and between ought self-discrepancies and agitation. They also reported that "one of the most frequently asked questions during our data collection sessions…was, 'What's the difference between ideal and ought?'" (p. 265). Consequently, the authors concluded that SDT is less robust than previously believed and that the different types of self-discrepancies are indistinguishable. Higgins (1999) responded by highlighting methodological factors (e.g., order effects) that may have contributed to this failure to support the fundamental predictions of SDT. He also argued that by not allowing participants to self-generate attributes to describe their various selves, nomothetic tasks are unable to adequately capture participants' most accessible self-discrepancies (a criticism that applies to other nomothetic measures, such as Q-sorts, as well; Rogers, 1954; Zentner & Renaud, 2007).

The methodology recommended by Higgins, exemplified by the Selves Questionnaire (Higgins et al., 1985), has also been criticized for being too difficult for participants to complete and for researchers to score (Tangney et al., 1998). From the participant's perspective, generating up to 60 different attributes to describe the six self-states may stretch limitations of vocabulary and patience. From the researcher's perspective, using a thesaurus to determine matches and mismatches across self-states is time-consuming and often involves subjective judgments. In addition, the complex coding and scoring process allows no conclusions to be drawn about attributes that appear in one self-state, but for which neither synonyms nor antonyms appear in the others. For example, if only the actual-own self-state contains *friendly*, does the absence of this attribute from other self-states denote a discrepancy or simply lower salience of the attribute *friendly* in the other self-states?

Perhaps it is largely due to these features of scoring that few participants demonstrate measurable self-discrepancies. For example, across four studies using the Selves Questionnaire, Boldero and Francis (2000) found that as few as 4.3% and never more than 26% of their participants actually obtained scores indicating the presence of self-discrepancies. Given the research attention that has been devoted to the correlates and consequences of self-discrepancies, it is rather surprising that the most popular measure suggests that few people actually have them.

In response to the difficulties associated with the Selves Questionnaire, other idiographic measures that do not ask participants to list attributes describing the actual self have been developed. One variation, the Self Lines measure (Francis, Boldero, & Sambell, 2006), has participants graphically represent the distance of their actual self from attributes generated to describe their ideal and ought selves. Another variation requires participants to use a Likert-type scale to rate the extent to which participant-generated ideal and ought attributes describe their actual selves (Carver, Lawrence, & Scheier, 1999; Cheung, 1997; Shah, 2003; Shah, Higgins, & Friedman, 1998). Although simpler and more objective for the researcher to score and more likely to yield a broad range of self-discrepancy scores, these idiographic methods remain open to the criticism that

requiring participants to generate lists of ideal or ought attributes introduces verbal ability as a confound.

Given the shortcomings in these existing measures, the purpose of this research was to evaluate the validity of a new measure of self-discrepancies. The theoretical, methodological, and practical considerations discussed above call for a measure that (1) captures participants' most accessible self-discrepancies by allowing for idiographic responding, (2) addresses limited vocabulary and participant fatigue, (3) may be administered to large samples and be easily and objectively scored, and (4) provides clear instructions. The Integrated Self-Discrepancy Index (ISDI), so-named because it integrates idiographic and nomothetic methods, allows participants the opportunity to generate attributes most salient to themselves (as recommended by Higgins, 1987, 1999) while also providing help to those participants for whom this task of generating attributes is too difficult (as suggested by Tangney et al., 1998). Diverging from other idiographic methods (e.g., those used by Carver et al., 1999; Cheung, 1997; and Shah et al., 1998), participants are provided with a list of adjectives from which to choose to complete or modify their idiographically-generated lists, addressing the needs of those participants who may have difficulty generating new words due to vocabulary limitations or fatigue. In addition, rather than having participants list attributes to describe their actual selves, as required by the Selves Questionnaire, participants directly rate the extent to which their ideal and ought traits describe their current selves. This method, used by others (e.g., Carver et al., 1999; Cheung, 1997; Shah et al., 1998), allows for efficient, objective, quantitative scoring by summing participants' ratings and avoids the necessity of calculating difference scores.

Finally, including the concept of morality in a description of the ought self should clarify the distinction between ideal and ought. Higgins et al. (1985) refer to "offending one's sense of morality" (p. 54) when describing the consequences of an actual-own / ought-own self-discrepancy, and to "violating others' rules and sense of morality" (p. 54) when describing the consequences of an actual-own / ought-other self-discrepancy. However, no existing measure of self-discrepancies explicitly includes the concept of morality in instructions describing the ought self.

Data from two studies are presented that test the validity of the ISDI as a measure of self-discrepancies. If the ISDI is a valid measure, it should support the theoretical predictions of SDT: Ideal self-discrepancy scores should uniquely predict dejection-related mood and ought self-discrepancy scores should uniquely predict agitation-related mood. Given the moderate to high correlations typically found between ideal and ought self-discrepancies and between dejection and agitation, hierarchical regression analyses were used to determine the unique contributions of each type of self-discrepancy (cf. Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991). For example, in testing for the unique relation between ideal self-discrepancies and dejection-related mood, variance in dejection related to ought self-discrepancies and agitation was partialled out by entering ought self-discrepancies and agitation in step 1, followed by ideal self-discrepancies in step 2; a significant change in R-square between steps 1 and 2 indicates that ideal self-discrepancies accounted for significant unique variance in dejection, even after controlling for ought self-discrepancies and agitation. Finally, correlations between the ideal and ought selves were examined to determine whether the ISDI allows participants to distinguish between the ideal and ought selves better than previous measures of self-discrepancies.

STUDY 1

Method

Participants

Participants were 284 undergraduates (67.3% women, 76.4% European Americans, average age = 19.32 years) recruited from introductory psychology classes at two large public universities. Information on class standing was not collected. Participants received partial course credit.

Materials and Procedure

Participants completed all measures in small groups during a single session.

Integrated Self-Discrepancy Index (ISDI)

The ISDI may be used to assess ideal or ought self-discrepancies[1] from the participants' own standpoint and / or the standpoint of a significant other. In addition, it has been adapted for both computerized and paper-and-pencil administration.[2] Participants in this study completed the paper-and-pencil version that assessed self-discrepancies from the participants' own standpoint only. However, the full measure, which includes assessment of self-discrepancies from the standpoint of a significant other (if desired), is described below.

Participants were given verbal instructions explaining that they would be asked to describe different types of selves (words in italics represent those taken from the original Selves Questionnaire instructions, Higgins et al., 1985):

[1]In addition to the ideal and ought domains of the self, discrepancies from the undesired self may also be assessed. Information about using the ISDI to assess the undesired self may be found in Hardin and Leong (2005) and at http://webpages.acs.ttu.edu/erhardin/ISDI.html.

[2]A copy of the paper-and-pencil measure may be obtained at http://webpages.acs.ttu.edu/erhardin/ISDI.html. The computerized version is described in Hardin and Leong (2005).

> The type of person you ideally want to be refers to *your beliefs concerning the attributes you would ideally like to possess; your ultimate goals for yourself*.
>
> The type of person you think you ought to be refers to *your beliefs concerning the attributes you believe you should possess* or that you are obligated to possess; your moral rules for yourself.
>
> There are no wrong answers or wrong words – you may use any words you want to describe these different types of self. Sometimes it is hard to tell the difference between these different types of self. Here is an example.
>
> As an example of how the ideal and ought are different, I may ideally want or hope to be rich someday, but I do not think I have a duty or am morally obligated to be rich. So, rich would be a word that describes the type of person I ideally want to be, but it is not a word that describes the type of person I think I ought to be.[3]

Idiographic component. Participants were presented with each self-state and asked to list up to five attributes to describe it. For example, for the ideal-own self-state, participants were asked to, "Please list 5 qualities that you would ideally like to be or to possess." When self-discrepancies from the standpoint of a significant other are assessed, participants are first asked to indicate the significant other who is most important to them; this person is used as the *other* in subsequent tasks. For example, for the ideal-other self-state, participants would be asked to, "Please list 5 qualities that you believe [your significant other] would ideally like for you to be or to possess." Although the Selves Questionnaire (Higgins et al., 1986; Higgins et al., 1985) asks participants to generate ten attributes for each self-state, Francis et al. (2006) demonstrated empirically that five attributes appears to be the optimal number.

Nomothetic component. After generating the traits for each self-state, participants were shown a list of 100 adjectives from which they could choose in order to complete (if less than five attributes were listed) or modify their lists. The adjectives were selected from Anderson's (1968) list of 555 trait words. Anderson's original list was divided into quartiles according to mean likeability rating and 25 words were randomly selected from each quartile. The same list, in alphabetical order, was presented to all participants for all self-states. This allowed for idiosyncratic attributes to be generated as well as provided help to those for whom the task of generating trait words was more difficult. The list was made available to participants only after they had attempted to generate words to describe all of the self-states; pilot testing demonstrated that this resulted in participants idiographically generating more words than when allowed to consult the list along the way, without resulting in participants changing more words or perceiving the task as more difficult (Hardin, 2002).

Scoring. After completing the lists of attributes, participants then indicated how much they thought each of the qualities listed actually described their ideal (or ought) self at that time. A five-point rating scale was used (1 = *completely applies to me*, 2 = *applies to me very much*, 3 = *applies to me somewhat*, 4 = *applies to me a little*, 5 = *doesn't apply to me at all*).

As with all idiographic methods, there is the assumption that participants possess an idiosyncratic understanding of the attributes generated. For example, *independent* might mean *self-sufficient* to one participant but *autonomous* to another. However, this individual difference in meaning does not affect scores on the ISDI, as each participant both generates and rates the attributes according to his or her individual understanding of the word. For the same reason, participants are not asked to rate the extent to which a word describes the ideal or ought self-states (e.g., "to what extent does [word] describe your ideal self?"). Two participants might both generate the word *thin* to describe their ideal selves, but have very different objective standards for their ideal thinness: One aspires to be a healthy weight, and the other aspires to be significantly underweight. This difference in extent does not affect self-discrepancy scores, as each participant will bring his or her idiosyncratic understanding of the word generated to the subsequent task of rating the extent to which the word describes the actual self. When participants generate trait words to describe the ideal and ought selves, they are implicitly asked to generate words *as they define them*; participants are also implicitly asked to rate the extent to which each word *as they define it* describes them as they actually are right now. In addition, by not obtaining extent ratings, we avoid the potentially problematic issue of how to use them, in light of the problems associated with difference scores (e.g., Cronbach & Furby, 1970; Edwards, 2001).

Self-discrepancy scores were computed by averaging the ratings of the five attributes generated for each of the self-states. These ratings represent the extent to which the respondent perceives the actual self-state as different from the ideal or ought self-state, with higher ratings representing larger discrepancies. For example, a score of 5 for the ideal-own self-state indicates that the person felt extreme discrepancy between those attributes he or she aspired to

[3]It is possible that providing a specific word (*rich*) as an example in the instructions influenced participants' responses. Although we were not able to compare how many participants used the word *rich* to describe one of their self-states with and without this example, other data suggest that this word did not appear any more often than other common words. Analysis of participants' responses to a computerized version of the ISDI (Hardin & Leong, 2005) showed that *rich* was listed 229 times by 155 different participants, *happy* or *happiness* was listed 230 times by 167 participants, *honest* or *honesty* was listed 233 times by 117 participants, and *success* or *successful* was listed 227 times by 120 participants.

possess and the attributes the individual felt he or she actually did possess, whereas a score of 1 indicates perfect congruence (i.e., no discrepancy).

Mood Measure

Participants also completed a measure of mood that included items from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) and the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965). These items were used to measure four types of mood consistent with distinctions made by Higgins (Higgins, 1987; Higgins et al., 1986) as being relevant to self-discrepancies: dejection, cheerfulness, agitation, and quiescence. Items were selected from the PANAS and MAACL that were most representative of each mood domain, and thus each of the four scores has high face validity. The six-item dejection composite includes items describing a negative, low arousal state, such as *disappointed* and *gloomy*. The seven-item cheerfulness composite refers to words with a positive, high arousal connotation, such as *joyful* and *excited*. The four-item agitation composite is composed of negative, high arousal terms, including *scared* and *frightened*. The four-item quiescence composite includes positive, low arousal terms, such as *peaceful* and *steady*. The items on each composite were intermixed and participants were asked to indicate to what extent each adjective described how they generally feel using a 5-point Likert scale with responses ranging from 1 (*not at all*) to 5 (*extremely*). Because SDT explicitly hypothesizes that self-discrepancies predict momentary fluctuations in mood as well as chronic "vulnerability" to specific emotions (Higgins, 1987), participants rated how they felt generally to elicit their emotional "personalities" rather than specific recollections of actual emotions (Robinson & Clore, 2002).

Scores on all mood composites were computed by averaging responses to the items, and thus may range from 1 to 5, with higher scores indicating greater intensity of mood (e.g., greater levels of dejection). Supporting the discriminant validity of the four composite scores, exploratory factor analysis using maximum likelihood estimation and Varimax rotation yielded a four factor solution, with four eigenvalues greater than 1.0. Each item had its highest loading on the expected factor.

Results and Discussion

Data were examined first for univariate outliers, defined as cases with scores on any variable 3.29 or more standard deviations from the mean and which appeared to be outliers in examinations of histograms (Tabachnik & Fidell, 2007). Three such cases were identified, one with an extremely high ought-own self-discrepancy score and two with extremely high dejection scores. After deleting these three cases, the data were examined for multivariate outliers using Mahalanobis' distances; none were identified. Thus, the final total sample was 284 participants.

Means, standard deviations, Cronbach's alpha reliabilities, and correlations are presented in Table 1. Virtually all participants had self-discrepancy scores greater than 1.0 (99.3% for ideal self-discrepancies, 96.5% for ought self-discrepancies), indicating that almost all participants received scores indicating the presence of at least minimal self-discrepancies. As shown by the correlations in Table 1, self-discrepancies were associated with increased negative and decreased positive mood.

To test the specific predictions of SDT, four hierarchical regression analyses, with each of the four types of mood as the criterion variable, were conducted. For each analysis, the self-discrepancy that was expected to uniquely predict the criterion mood was entered in step 2. For example, to

TABLE 1
Means, Standard Deviations, and Correlations among Measures in Study 1

	Measure	*M*	*SD*	*Correlations and Inter-Item Reliabilities*					
				1	*2*	*3*	*4*	*5*	*6*
1.	Ideal-own self-discrepancies	2.72	.75	*.71*	--	--	--	--	--
2.	Ought-own self-discrepancies	2.24	.63	.32*	*.65*	--	--	--	--
3.	Cheerfulness	3.50	.69	-.44*	-.29*	*.86*	--	--	--
4.	Dejection	2.03	.74	.29*	.20*	-.48*	*.88*	--	--
5.	Quiescence	3.31	.68	-.34*	-.31*	.53*	-.36*	*.68*	--
6.	Agitation	1.97	.74	.15*	.21*	-.18*	.53*	-.15*	*.84*

Notes: All scores may range from 1 to 5. Cronbach's alpha reliabilities are presented on the diagonal.
*p < .05

predict quiescence, cheerfulness and ideal-own self-discrepancies were entered in step 1 and ought-own self-discrepancies were entered in step 2. Results fully supported the predictions of SDT (Higgins, 1987; see Table 2). Controlling for ought-own self-discrepancies and the other type of mood, ideal-own self-discrepancies did not account for significant variance in agitation ($\Delta R^2 < .01$, $p > .52$, $pr = -.04$) or quiescence ($\Delta R^2 < .01$, $p > .09$, $pr = -.10$) but did account for significant variance in dejection and cheerfulness. Controlling for ideal self-discrepancies and the other type of mood, ought self-discrepancies did not account for significant variance in dejection ($\Delta R^2 < .01$, $p > .56$, $pr = .04$) or cheerfulness ($\Delta R^2 < .01$, $p > .14$, $pr = -.09$), but did account for significant variance in agitation and quiescence.

Although significantly correlated (see Table 1), ideal and ought self-discrepancies demonstrated a weaker relationship than found in previous research. For example, using the Selves Questionnaire, Boldero and Francis (2000) obtained correlations between ideal and ought self-discrepancies that ranged from .58 to .79 across four studies, which are all significantly higher than the correlation of .32 obtained here (zs > -2.53, ps < .05). Using a purely nomothetic method, Tangney et al. (1998) also found significantly higher correlations between ideal and ought self-discrepancies (r (196) = .68, $z > 5.57$, $p < .05$). Using the idiographic spatial Self-Lines measure, Francis et al. (2006) found a significantly higher correlation between ideal and ought self-discrepancies (r (80) = .56, $z = 2.34$, $p < .05$). Finally, using a measure most similar to the ISDI (i.e., a modified version of the Selves Questionnaire that has participants directly rate the degree to which words generated to describe the ideal and ought selves apply to the actual self, but that does not provide a nomothetic list or include the concept of morality in the definition of the ought self), Carver et al. (1999) also found a significantly higher correlation between ideal and ought self-discrepancies (r (85) = .58, $z = 2.64$, $p < .05$). Thus, the ISDI seems to capture the unique variance associated with ideal and ought discrepancies better than previous measures.

STUDY 2

The data from Study 1 supported the reliability and validity of the ISDI as a measure of own self-discrepancies when self-discrepancies and mood are assessed simultaneously. Study 2 tested the reliability and validity of the ISDI using both own and other standpoints under more rigorous conditions: when self-discrepancies and mood were measured at two different times. Given that completing the self-discrepancy measure momentarily increases the accessibility of participants' self-discrepancies, we would expect correlations between self-discrepancies and mood to be greater when measured simultaneously than when measured separately. In addition, the separate effects of standpoint on the self (own versus other) were assessed.

Method

Participants

There were 169 undergraduate participants (74.2% female; 67.9% European American; 42.9% first-year students; average age = 20.88 years). Participants recruited

Table 2
Results from Step 2 of Hierarchical Regression Analyses in Study 1

Criterion	Predictors	B	SE B	β	*pr*	Total R^2 ($\Delta R^{2)}$
Dejection	Constant	.41	.18	--	--	.33* (.04*)
	Agitation	.50	.05	.50*	.51*	
	Ought-own self-discrepancy	.04	.06	.03	.04	
	[a]Ideal-own self-discrepancy	.20	.05	.20*	.23*	
Agitation	Constant	.71	.18	--	--	.30* (.01*)
	Dejection	.52	.05	.52*	.51*	
	Ideal-own self-discrepancy	-.04	.05	-.04	-.04	
	[a]Ought-own self-discrepancy	.14	.06	.12*	.13*	
Cheerfulness	Constant	3.01	.28	--	--	.36* (.07*)
	Quiescence	.41	.05	.40*	.43*	
	Ought-own self-discrepancy	-.09	.06	-.08	-.09	
	[a]Ideal-own self-discrepancy	-.26	.05	-.29*	-.30*	
Quiescence	Constant	2.36	.31	--	--	.31* (.02*)
	Cheerfulness	.44	.06	.44*	.43*	
	Ideal-own self-discrepancy	-.09	.05	-.10	-.10	
	[a]Ought-own self-discrepancy	-.16	.06	-.15*	-.16*	

[a]Indicates variable entered in Step 2
*$p < .05$

from introductory psychology courses (n = 115) received partial course credit. Remaining participants completed the measures as part of a class exercise in their research methods courses; they did not receive credit, but did have the option to decline having their data used in this research.

Materials and Procedure

Participants completed a battery of measures that included the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which assesses depressive symptoms within the past week; the Social Avoidance and Distress Scale (SAD; Watson & Friend, 1969), which measures symptoms of social anxiety in general; and a paper-and-pencil version of the ISDI evaluating both own ought self-discrepancy scores were also created by averaging ratings for the own and other self-guides. These overall self-discrepancy scores have been used in past research on SDT (e.g., Fairbrother & Moretti, 1998; Higgins et al., 1985).

Participants completed the ISDI in small groups one week before completing the mood measures. Participants recruited from introductory psychology completed the measures during data collection sessions scheduled outside of class; participants recruited from research methods courses completed the measures during class. Seventeen students did not return to complete the second part of the study. These 17 students did not differ from the students who completed both parts of the study in ideal or ought self-discrepancies [F (2, 186) = 2.02, p > .13].

Results and Discussion

Data were examined first for univariate outliers, as in Study 1. Two cases were identified, both with extremely high ought-other self-discrepancy scores. After deleting these two cases, the data were examined for multivariate outliers using Mahalanobis' distances; one was identified and deleted. Thus, the final total sample was 169 participants.

Means, standard deviations, Cronbach's alpha reliabilities, and correlations for all measures are presented in Table 3. As in Study 1, virtually all participants had self-discrepancy scores greater than 1.0, indicating the presence of at least minimal self-discrepancies (ranging from 91.1% of participants for ought-own self-discrepancies to 100% of participants for ideal-own self-discrepancies). As shown by the simple correlations in Table 3, greater social anxiety is associated with greater self-discrepancies in general, whereas greater depressive symptoms are associated only with greater ideal self-discrepancies.

Results from hierarchical regression analyses again supported the predictions of SDT (see Table 4): Controlling for ought self-discrepancies and depressive symptoms, ideal self-discrepancies did not account for additional variance in social anxiety (ΔR^2 < .01, p > .38; pr = .07), whereas ought self-discrepancies did account for significant variance in social anxiety after controlling for depressive symptoms and ideal self-discrepancies. Conversely, controlling for ideal self-discrepancies and social anxiety, ought self-discrepancies did not account for additional variance in depressive symptoms (ΔR^2 = .01, p > .13, pr = -.12),

Table 3
Means, Standard Deviations, and Correlations among Measures in Study 2

Measure	M	SD	Correlations and Inter-Item Reliabilities							
			1	2	3	4	5	6	7	8
1. Ideal self-discrepancies	2.72	.74	*.81*							
2. Ideal-own	2.81	.79	.91*	*.67*						
3. Ideal-other	2.63	.82	.92*	.66*	*.70*					
4. Ought self-discrepancies	2.10	.57	.45*	.39*	.42*	*.80*				
5. Ought-own	2.10	.64	.39*	.33*	.37*	.92*	*.69*			
6. Ought-other	2.10	.60	.43*	.39*	.40*	.91*	.67*	*.62*		
7. Social anxiety	64.96	19.30	.21*	.19*	.20*	.23*	.17*	.26*	*.95*	
8. Depressive symptoms	17.20	8.04	.21*	.16*	.22*	.03	-.04	.09	.27*	*.78*

Notes: Self-discrepancy scores may range from 1 to 5; social anxiety scores may range from 28 to 140; depressive symptoms scores may range from 0 to 60. Cronbach's alpha reliabilities are presented on the diagonal.
*p < .05

Table 4
Results from Step 2 of the Hierarchical Regression Analyses Testing the Specific Predictions of SDT Using Overall Ideal and Ought Self-discrepancy Scores in Study 2

Criterion	Predictors	B	SE B	β	*pr*	Total R^2 (ΔR^2)
Social anxiety	Constant	3.91	2.12	--		.13* (.02*)
	Depressive symptoms	.16	.03	.32*	.31*	
	Ideal self-discrepancy	-1.33	.91	-.08	-.08	
	[a]Ought self-discrepancy	1.76	.66	.15*	.14*	
Depressive symptoms	Constant	7.66	2.97	--		.11* (.04*)
	Social anxiety	.11	.03	.26*	.26*	
	Ought self-discrepancy	-1.78	1.18	-.13	-.12	
	[a]Ideal self-discrepancy	2.34	.91	.21*	.20*	

[a]Indicates variables entered in Step 2.
*$p < .01$

whereas ideal self-discrepancies did account for significant variance in depressive symptoms after controlling for social anxiety and ought self-discrepancies.

Thus, Higgins' (1987) predictions regarding the specific relations of ideal self-discrepancies to dejection-related mood and ought self-discrepancies to agitation-related mood were supported in this sample using the ISDI and when measuring self-discrepancies one week prior to measuring mood. The smaller effect sizes obtained here, as compared to Study 1, are likely due to the fact that self-discrepancies and mood were not measured simultaneously (Boldero, Moretti, Bell & Francis, 2005).

As in Study 1, ideal and ought self-discrepancies were significantly correlated (see Table 3), but this correlation was weaker than five of seven correlations obtained by Boldero and Francis (2000) using the Selves Questionnaire ($zs > 2.00$, $p < .05$) and either of the correlations obtained by Tangney et al. (1998) using their nomothetic measure ($zs \geq 2.29$, $p < .05$). The correlation obtained here does not differ from that obtained by Francis et al. (2006) using the idiographic spatial Self-Lines measure ($z = 1.10$, *ns*) or from that obtained by Carver et al. (1999) using their modified Selves Questionnaire ($z = 1.32$, *ns*).Newer research on SDT has also begun to explore possible subtle differences between own and other self-discrepancies and their relationships with mood (e.g., Gonnerman, Parker, Lavine, & Huff, 2000; for a review, see Moretti & Higgins, 1999). For exploratory purposes, therefore, the hierarchical regressions were repeated with separate own and other self-discrepancy scores. Predictions of SDT were fully supported for social anxiety (see Table 5): Adding ought-own and ought - other self - discrepancies separately in step 2

Table 5
Results from Step 2 of the Hierarchical Regression Analyses Testing the Specific Predictions of SDT Using Separate Own and Other Self-discrepancy Scores in Study 2

Criterion	Predictors	B	SE B	β	*pr*	*Total* R^2 (ΔR^2)
Social anxiety	Constant	35.50	6.76	--	--	.14* (.04*)
	Depressive symptoms	.58	.18	.24*	.24*	
	Ideal-own self-discrepancy	1.21	2.43	.05	.04	
	Ideal-other self-discrepancy	.70	2.43	.03	.02	
	[a]Ought-own self-discrepancy	.66	3.04	.02	.02	
	[a]Ought-other self-discrepancy	6.17	3.27	.19	.15	
Depressive symptoms	Constant	8.19	2.98	--	--	.13* (.04*)
	Social anxiety	.10	.03	.24*	.24*	
	Ought-own self-discrepancy	-2.74	1.25	-.22*	-.17*	
	Ought-other self-discrepancy	1.09	1.38	.08	.06	
	[a]Ideal-own self-discrepancy	.16	1.01	.02	.01	
	[a]Ideal-other self-discrepancy	2.06	1.00	.21*	.16	

[a]Indicates variables entered in Step 2.
*$p < .05$

accounted for a significant increase in variance in social anxiety. Although neither type of ought self-discrepancy was a significant predictor by itself, ought-other self-discrepancies accounted for more unique variance than ought-own self-discrepancies. This is not surprising, given the inherent role of others in social anxiety. After controlling for depressive symptoms and ought self-discrepancies, ideal self-discrepancies did not account for additional variance in social anxiety.

When separate ideal-own and ideal-other self-discrepancy scores were used in step 2 to predict depressive symptoms, they accounted for a significant increase in variance (see Table 5), which is primarily attributable to ideal-other self-discrepancies. In addition, an unexpected suppression effect emerged: Although the composite ought self-discrepancy measure was unrelated to depressive symptoms (see Table 4), this regression revealed that ought-own self-discrepancies were significantly *negatively* related to depressive symptoms. In other words, after controlling for social anxiety, ought-other self-discrepancies and ideal self-discrepancies, depressive symptoms *decreased* as one became *less* similar to one's ought self. However, despite the significant beta-weight for ought-own self-discrepancies in this analysis, separate ought-own and ought-other self-discrepancy scores in step 2 of a regression predicting depressive symptoms do not account for significant unique variance.

GENERAL DISCUSSION

In order to adequately test the predictions of SDT, a psychometrically sound measure is needed that is easily understood and not too difficult for respondents. The current studies suggest that the ISDI meets these criteria. Across two studies, whether self-discrepancies and mood were measured simultaneously or one week apart, the predictions of SDT were fully supported. The only unexpected finding was that after controlling for social anxiety, ought-other and ideal self-discrepancies, ought-own self-discrepancy emerged as a significant *negative* predictor of depressive symptoms. Given that such suppression effects have not been found in previous research and that we do not have data to replicate this effect, this finding must be interpreted with caution.

Overall, however, the results of these two studies are consistent with SDT and indicate that the ISDI is a psychometrically sound measure of self-discrepancies that supports the predictions of SDT. Unlike nomothetic adjective-rating (e.g., Tangney et al., 1998) or Q-sort (e.g., Zentner & Renaud, 2007) methods, the ISDI allows participants to generate attributes, ensuring that the attributes important to the individual are assessed. Not only is such idiographic measurement of self-states theoretically essential (e.g., Higgins, 1987, 1999), but empirical evidence also supports the contention that the unique relationships between self-discrepancies and mood are more likely to be found when the traits comprising the self-guides are relevant and important (Heine & Lehman, 1999).

Compared to more idiographic methods, the ISDI also provides easily-scored, objective, quantitative data; thus, it may be preferred by researchers over the Selves Questionnaire (Higgins et al., 1985), which requires complex coding of matches and mismatches using a thesaurus. The ISDI is also simpler and more reliable to score than the Self Lines Measure (Francis et al., 2006), which requires the researcher to physically measure the distance between marks on the paper. The ISDI also requires participants to generate fewer attributes (5 versus 10) for fewer domains of the self (ideal and ought, versus ideal, ought, and actual) than the Selves Questionnaire.

Unlike a similar method used by others (Carver et al., 1999; Cheung, 1997; Shah, 2003; Shah et al., 1998), the current method provides a nomothetic *cheat sheet* to assist participants for whom the task remains difficult. In light of the fact that idiographic methods have been challenged as being too difficult for participants precisely because they require participants to generate a large list of attributes on their own (Tangney et al., 1998), the inclusion of this nomothetic list is a particular advantage of the ISDI. Pilot data demonstrated that over half of participants changed a small number of their idiographically-generated words after consulting the list (Hardin, 2002), indicating that the list is beneficial for the majority of participants. Thus, the ISDI addresses many of the criticisms of idiographic measures raised elsewhere (e.g., Ozgul et al., 2003; Tangney et al., 1998). With more than 96% of participants receiving scores indicative of at least minimal self-discrepancies, the ISDI also captures a broader range of self-discrepancies than the original Selves Questionnaire (cf. Boldero & Francis, 2000).

Thus, unlike the original Selves Questionnaire (Higgins et al., 1985), the ISDI is simpler for researchers to score, simpler for participants to complete, and yields more varied scores. Finally, compared to several other measures of self-discrepancies, the ISDI produces significantly lower correlations between ideal and ought self-discrepancies. Although Boldero et al. (2005) have argued that high correlations can be expected, the smaller correlations obtained with the ISDI suggest that this new measure is better able to discriminate between the ideal and ought selves. Thus, the ISDI may provide stronger tests of the hypotheses of SDT.

There are, of course, some instances in which the ISDI may not be the preferred measure. For example, if researchers are explicitly interested in measuring the extremity of participants' ideal or ought self-guides, then other measures, such as the Self-Lines Measure (Francis et al., 2006), would be more appropriate because they allow researchers to directly measure the distance between the extreme of the trait and the individual's ideal conception of the trait. In addition, the ISDI as described here would not be appropriate for answering questions related to discrepancies between, for example, ideal and ought self-guides. Such questions may be answered using the Selves

Questionnaire (Higgins et al., 1985). The ISDI could be modified to answer such questions (e.g., by asking participants to rate the extent to which words generated to describe the ideal self also describe their ought self), but the current data do not speak to the validity of such modifications.

Limitations and Future Research

As an initial attempt to validate the ISDI, these studies have provided important evidence for the psychometric properties of the measure. However, these data are preliminary. Much of the research on SDT, including the current research, uses undergraduates as participants; it remains unknown whether the ISDI is a valid and reliable measure for other populations, including clinical populations. Whether the ISDI is able to predict clinical levels of affective distress is also unknown because these studies relied on measures designed to assess non-clinical distress (with the exception of the CES-D in Study 2). In addition, although we have presented data supporting the internal consistency of the ISDI, additional data supporting other aspects of reliability, such as test-retest reliability, are also needed. Finally, we made some comparisons between the ISDI and data generated in previous research on SDT. A stronger test of our assertion that the ISDI functions as well or better than other measures would be provided by administering multiple measures of self-discrepancies to participants and directly comparing the results.

As noted earlier, the ISDI does not ask for ratings of the descriptiveness of the ideal and ought self-states because of the assumption that participants bring their idiographic understanding of each trait word to the task. In addition, one might expect that relatively few participants would generate attributes with modifiers (e.g., *very confident*). Supporting this assumption, only 0.55% (19 of 3740) ideal words and 0.06% (2 of 3470) ought words generated by participants in Hardin and Leong's (2005) study included extent modifiers such as *very, extremely, slightly, or moderately*.

SDT has generated an important body of research on affective and self-regulatory processes that has crossed disciplinary boundaries. SDT also continues to inspire new scholarship as researchers move beyond "first-generation" questions exploring *if* there are relationships between self-discrepancy and mood to second and third-generation questions of *when* and *how* these effects occur (Zanna & Fazio, 1982). The current studies provide initial evidence that the ISDI is a valid and reliable measure of self-discrepancies in non-clinical undergraduate samples that is likely to be useful to researchers investigating the many applications of SDT.

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Erin E. Hardin
Department of Psychology
Box 42051
Texas Tech University
Lubbock, TX 79409-2051
Email: erin.hardin@ttu.edu

Jessica Lakin
Department of Psychology
Drew University
36 Madison Avenue
Madison, NJ 07940
Email: jlakin@drew.edu