

IMPLICATIVE DILEMMAS AND GENERAL PSYCHOLOGICAL WELL-BEING

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This study examined the relationship between psychological well-being and implicative dilemmas (Feixas & Saúl, 2004). Participants completed repertory grids based on a sentence-completion task as well as standardized measures of anxiety, depression, and self-esteem. Zero-order correlations revealed statistically significant relationships between the percentage of dilemmas derived from the repertory grids and the measures of psychological well-being. Hierarchical regression analyses, however, indicated that dilemmas were not generally predictive of psychological well-being after controlling for variability in self-discrepancies. Two archival data sets and two individual cases were also examined, and it was concluded that person-centered studies are needed to effectively address the validity of implicative dilemmas.

Keywords: *Implicative dilemmas, psychological well-being, sentence-completion task*

INTRODUCTION

Cognitive conflicts have long been recognized as potential contributors to negative psychological states (Freud, 1923; Festinger, 1957; Festinger and Carlsmith, 1959; Heider, 1958), although the relationship between conflicts and negative emotions, like depression, anxiety and lowered self-esteem has largely been explored only in theory. This is, perhaps, due to the perceived difficulty of measuring cognitive conflicts. Using the repertory grid technique outlined by George A. Kelly (1955), however, Feixas, Saúl and Sanchez (2000) have recently taken steps towards more reliable measurement of cognitive conflicts referred to as ‘implicative dilemmas.’

Implicative dilemmas involve awareness of discrepancies between a person’s actual and ideal selves, as well as an implicit cost associated with becoming more like the ideal self. For example, a woman may construe her actual self as *pessimistic*, and yet wish to be *optimistic*; however, she may generally construe *optimistic* people as *uncritical of the world around them* or *foolish* – both undesirable qualities. The woman is thus caught in a dilemma because, despite any suffering her pessimism creates, becoming open to a more optimistic self (a desired trait) would imply becoming foolish and unable or unwilling to think critically about the world

(undesired traits). Blocked from casting herself in the role of her ideal self in this aspect due to a cost she considers too high, she is consequently stuck in an unsatisfied state of self-discrepancy.

In the past personal construct psychologists have attempted to assess cognitive conflicts using repertory grid measures based on construct angular distances, construct content, and ‘imbalance’ within triads (Fransella, 1972; Fransella & Crisp, 1979; Ryle, 1979; Slade & Sheehan, 1979; Winter, 1983, 1992; Winter & Trippett, 1979). Feixas and his colleagues (Feixas, Saúl & Sanchez, 2000; Feixas & Saúl, 2004) define and assess dilemmas based upon the correlation between congruent and discrepant constructs. Specifically, dilemmas and dilemmatic constructs (here-to-after referred to singly as ‘dilemmas’) are determined in a three-step process. First, self-discrepant constructs are identified as those constructs on which the actual and ideal selves are rated at opposite ends of the bipolar scales. Second, the construct correlations are computed, and those constructs that correlate with the self-discrepant constructs according to a predetermined salience criteria (usually absolute $r = .20$ or absolute $r = .35$) are identified. Lastly, the saliently correlated constructs are examined for the location of the actual and ideal selves. For a positively correlated construct, if the actual and ideal selves are both located at opposite ends of the rating scale compared

to the ideal self on a given self-discrepant construct, then a dilemma is determined to be present. For a negatively correlated construct a dilemma is identified if the actual and ideal selves are located congruently with the ideal self on the given discrepant construct.

Returning to the individual example above, suppose the woman rated her actual self '5' and her ideal self '1' on the following scale:

Optimistic 1 2 3 4 5 Pessimistic

Further, suppose the woman rated her actual self '4' and her ideal self '5' on the following scale:

Foolish 1 2 3 4 5 Wise

Finally, the woman's ratings of all the people in the repertory grid yield a positive correlation ($r = .70$) between the *optimistic vs. pessimistic* and *foolish vs. wise* constructs; in other words, she tended to construe pessimistic people as wise. Following the three-step process above, the woman is clearly self-discrepant on the *optimistic vs. pessimistic* construct. Secondly, the correlation of .70 between the two constructs exceeds either salience criterion (.20 or .35). Lastly, the woman's ratings for the actual and ideal selves on the *foolish vs. wise* construct are incongruent with her ideal self on the *optimism vs. pessimism* construct. In conclusion, she construes herself as pessimistic and desires to be optimistic; however, she is caught in a dilemma because movement from the pessimistic to the optimistic pole includes a risk of becoming foolish, which is the undesirable pole of the *foolish vs. wise* construct.

Feixas and Saúl (2004) recently summarized the results of several studies that support the validity of their method of measuring implicative dilemmas. For instance, in a clinical group and a control group they found dilemmas occurring in one third of the control group and in one half of the clinical group, with the total number of dilemmas in the clinical group double that of the control group. They also found implicative dilemmas to be relevant in the clinical group's reporting of social phobia and irritable bowel syndrome, and their resolution to be associated with a decrease in symptomology. In a recent study by Fernandes et al. (2005), however, the number of implicative dilemmas computed from

repertory grids was not found to be significantly associated with general psychological well-being or problem solving skills among students entering college in Portugal.

The extant literature on implicative dilemmas has thus yielded inconsistent results, although many of the findings reported by Feixas and his colleagues have been positive. Given the promising nature of the technique and the relatively sparse number of empirical studies, two questions regarding the validity of implicative dilemmas were addressed in the current paper. First, would implicative dilemmas predict variability in different indicators of psychological adjustment above and beyond what could be predicted from self-discrepancies? As outlined above, the presence of implicative dilemmas in a repertory grid presupposes the presence of discrepancies between the actual and ideal selves: if no self-discrepancies are present, then no dilemmas will be detected as well. Given the long history of successfully predicting various emotional and psychological states from self-discrepancies (e.g., see Boldero, Moretti, Bell, & Francis, 2005; Higgins, 1999), it is important to establish that implicative dilemmas contribute uniquely to the prediction of psychological well-being. Second, given the logical dependency of implicative dilemmas on discrepancies between the actual and ideal selves, would an alternative technique for eliciting personal constructs lead to greater numbers of implicative dilemmas? Prior research with implicative dilemmas has relied solely upon Kelly's original triadic method for eliciting the personal constructs. Criticisms of this technique suggest that it may yield constructs that are not clearly bi-polar but instead represent composites of poles from two different constructs (e.g., *happy vs. arrogant*, *selfish vs. female*; see York, 1985), and Neimeyer et al. (2005) have recently recommended the dyadic elicitation procedure as a valid alternative to Kelly's original technique. Epting, Probert and Pittman (1993) reviewed a number of additional elicitation techniques, and Grice et al. (2004) recently introduced the sentence completion task as an elicitation method that may yield fewer problematic personal constructs (see Grice, Jackson, & McDaniel, 2006, p. 1210-1211) than the triadic elicitation method. This latter technique can also be used to elicit constructs that are relevant to particular domains (e.g., body image, academics, romantic relationships) or

experiences (e.g., working in a group, solving a problem, going on a blind date), and it can be used to prompt individuals for personal constructs on which they are likely to be self-discrepant. The sentence completion task may therefore prove particularly useful for dilemma research.

These two questions were addressed in the current paper through the re-analysis of archival data and through a new empirical study. Based on prior research, it was expected that implicative dilemmas would be present in the repertory grids of undergraduate, university students, and that higher numbers of implicative dilemmas would be associated with higher reported levels of depression and anxiety, and lower levels of reported self-esteem. Furthermore, these relationships were expected even after controlling for discrepancies between the actual and ideal selves. In addition to these general predictions and consistent with the person-centered approach of personal construct theory, the repertory grids of two participants from the novel study reported below were examined in depth as another means of addressing the potential validity of implicative dilemmas.

ANALYSIS OF ARCHIVAL DATA

Participants in the first archival data set (Grice, et al., 2006) were 138 students (36 males, 102 females), mostly Caucasian, ranging in age from 18 to 44 ($M = 20.01$, $Mdn = 19.00$, $SD = 2.92$) years. Participants first completed a repertory grid in which they rated their actual and ideal selves and 22 other people on 12 5-point scales constructed from their own personal constructs (e.g., *happy* vs. *sad*, *stingy* vs. *generous*) that were elicited via a sentence completion task. Participants then completed a trait grid in which they rated the same people on 30 marker items (e.g., *takes charge*, *starts conversations*) for the Big Five personality traits. At least one implicative dilemma was found in a substantial proportion of the participants' trait grids using either the .20 (67.4%) or the .35 (57.2%) criteria recommended by Feixas and Saúl (2004). Fewer participants, however, generated dilemmas in their personal construct grids for either the .20 (31.9%) or .35 (19.6%) criteria. One explanation for the different proportions may simply be the different numbers traits and personal constructs (30 and 12, respec-

tively) in the grids. To compensate for such differences, Feixas and Saúl recommended computing a standardized index, the *percentage of implicative dilemmas*, that adjusts for differences in grid size. Specifically, the observed number of dilemmas is divided by the possible number of dilemmas (kC_2 , where k equals the number of constructs) in the grid and then multiplied by 100. The resulting percentages yielded positively skewed distributions, and the means for the trait ($M_{.20} = 2.04$, $SD_{.20} = 2.70$; $M_{.35} = 1.03$, $SD_{.35} = 1.73$) and personal construct ($M_{.20} = 1.57$, $SD_{.20} = 3.07$; $M_{.35} = 0.68$, $SD_{.35} = 1.72$) grids were not significantly different for both the .20 [$t(137) = 1.51$, $p < .131$] and .35 [$t(137) = 1.87$, $p < .069$] salience criteria. The effect sizes were also very small, $\eta^2 = .02$ for both comparisons, reflecting the similarity between the compared means. Interestingly, the Spearman rank-order correlations between the percent dilemmas for the trait and personal construct grids were surprisingly low [$r_{.20} = .179$, $p < .036$; $r_{.35} = .126$, $p < .140$]. These small correlations indicate that individuals with large percentages of dilemmas in their personal construct grids did not necessarily have large percentages of dilemmas in their trait grids.

Participants in the second archival data set (McDaniel & Grice, 2007) were 133 students (46 males, 87 females), mostly Caucasian, ranging in age from 18 to 25 ($M = 19.17$, $Mdn = 19.00$, $SD = 1.38$) years. Participants again completed two grids in which they considered their actual, ideal, and ought selves from their own perspectives as well as from the perspectives of their parents (e.g., actual self from mother's perspective, ideal self from mother's perspective) and a significant other. These 12 self elements were then rated on 12 personal constructs (elicited via a sentence completion task) and on 30 marker items for the Big Five factors (again, 5-point scales were used). Participants also completed self-report measures of anxiety, depression, and self-esteem. Results revealed at least one dilemma in almost all of the participants' trait grids using either the .20 (94.7%) or the .35 (94.7%) criteria. Substantial numbers of the personal construct grids also yielded at least one dilemma for either the .20 (73.5%) or .35 (64.4%) criteria. Each of these four percentages was higher than the corresponding percentage from the first archival data set.

Statistical analysis of the percent dilemmas again yielded positively skewed distributions with highly

similar means for the trait ($M_{.20} = 6.98, SD_{.20} = 5.05; M_{.35} = 5.42, SD_{.35} = 4.19$) and personal construct grids for the .20 criterion [$t_{.20}(130) = 1.66, p < .100, \eta^2 = .02$], although the small difference between the trait and personal construct grids was statistically significant for the .35 criterion [$t_{.35}(130) = 2.67, p < .008, \eta^2 = .05$]. The Spearman rank-order correlations between the percent dilemmas for the trait and

personal construct grids were also low [$r_{.20} = .242, p < .005; r_{.35} = .169, p < .054$] although statistically significant or nearly significant at the .05 level. Hence, as with the first archival data set, the average percent dilemmas were similar across both types of grids (indicated by the small effect sizes), and participants with high percentages in their personal construct grids did not necessarily have high percentages in their trait grids.

Table 1: Zero-order Pearson correlations for percent implicative dilemmas and measures of depression, anxiety, and self-esteem for the second archival data set

	Trait Dilem _{.20}	Trait Dilem _{.35}	Construct Dilem _{.20}	Construct Dilem _{.35}	Self-esteem	Depression
Trait Dilem _{.20}	1					
Trait Dilem _{.35}	.94**	1				
Construct Dilem _{.20}	.23**	.17*	1			
Construct Dilem _{.35}	.19*	.16	.93**	1		
Self-esteem	-.28	-.25**	-.04	-.01	1	
Depression	.29**	.29**	-.03	-.06	-.71**	1
Anxiety	.29**	.27**	.10	.03	-.43**	.63**

Note. Despite the skewed distributions for the percent dilemma variables, the rank-order correlations were highly similar to the Pearson correlations. Self-esteem was measured with the Rosenberg Self-Esteem Inventory; Depression was measured with the Center for Epidemiological Study Depression scale; Anxiety was measured with the Hopkin’s Symptom Checklist. * $p < .05$, ** $p < .01$

Pearson correlations between the percent dilemmas and the self-report measures of psychological well-being are reported in Table 1. As can be seen, the percentages of dilemmas computed from the personal construct grids were not predictive of the measures of well-being (all r^2 's < .10 in absolute magnitude). For the trait grids, however, higher percentages of dilemmas significantly predicted higher levels of self-reported depression and anxiety and lower levels of self-esteem, although the size of each effect was not very large (all r^2 's < .30) in absolute magnitude. Given these latter effects hierarchical multiple regression analyses were conducted to examine the unique contribution of implicative dilemmas in the trait grids to the prediction of depression, anxiety, and self-esteem. A separate analysis was conducted for each of the three psychological well-being measures, and in the first step of the model the number of self-

discrepant constructs in the trait grids was entered as the predictor. In the second step the percentage of dilemmas (based on either the .20 or .35 criterion) was entered. The hierarchical model for anxiety, for instance, was constructed as follows:

$$\text{Step 1: Anxiety} = a + b_1(\text{Actual-Ideal Discrepancies}) + \epsilon$$

$$\text{Step 2: Anxiety} = a + b_1(\text{Actual-Ideal Discrepancies}) + b_2(\text{Percent Dilemmas}) + \epsilon$$

Each model was assessed for outliers, multicollinearity, and violations of statistical assumptions; and other than skewed distributions for the standardized residuals, no anomalies were noted. The results revealed that the observed change in R^2 from the first to second step was slight (all R^2 values < .013) and not statistically significant (all p 's > .181) for

all three models at either the .20 or .35 criteria. These findings indicated that, beyond the number of self-discrepant constructs, dilemmas offered little in the way of explaining variance in the self-report measures of depression, anxiety, and self-esteem.

NOVEL EMPIRICAL STUDY

Participants

Ninety-one people participated in this study. All of the participants were undergraduate students at Oklahoma State University, and the majority earned course credit in exchange for their participation. Thirty-five of the participants were male, 56 were female. The majority of the participants (72.5%) reported their ethnicity as Caucasian, 8.8% as Native American, 2.2% as Hispanic, 5.5% as African American, 4.4% as Asian, and 6.6% as "Other." Age ranged from 18 to 40, with the majority of students between the ages of 18 and 22 ($M = 20.54$, $SD = 3.41$). It should be noted that degrees of freedom reported below varied slightly due to missing data on the measures.

Materials

Idiogrid Software (Version 2.4). Idiogrid (Grice, 2007) can be used to administer and analyze various types of self-report data. Though designed specifically around George Kelly's repertory grid technique, it allows the user to administer a variety of repertory grids, including triadic, dyadic, or monadic construct elicitation using either rating or ranking scales. For this study, grids were created in three phases: The first set of instructions directed participants to provide the names of 16 people who fit eight positive role titles and eight negative role titles. In the second phase, 14 incomplete sentences were used to elicit the bipolar constructs. These sentences were written to generate constructs on which the participants would likely construe themselves as self-discrepant (e.g., "I am embarrassed when I act like I am _____"). They were then prompted to provide the opposing pole of the elicited construct. In the third phase participants rated their actual and ideal selves and the 16 named peo-

ple (18 total elements) on 5-point scales anchored by their personal constructs. For each rating they were also given the opportunity to choose a 'does not apply' option which was recorded as missing data. The role titles and 14 incomplete sentences are included in the Appendix. Previous research using Idiogrid has yielded data shown to be internally consistent and reliable over time, and self-ratings using Idiogrid have been shown to correlate highly with other multidimensional measures of self-concept (Grice, et al., 2004).

Rosenberg Self Esteem Inventory. The Rosenberg Self Esteem Inventory (RSEI; Rosenberg, 1965, p. 17-18) consists of ten self-report items designed to measure self-esteem. Participants rated each item on a 7-point Likert-type scale ranging from "disagree strongly" to "agree strongly", and responses were scored from 0 to 6 and totaled to generate scores that could range from 0 to 60. Data generated by the RSEI is reported to have both high reliability as well as construct validity (Goldsmith, 1986). Cronbach's alpha for all ten items in the present study was .88.

Center for Epidemiological Study Depression Scale. The Center for Epidemiological Study Depression scale (CES-D; Radloff, 1977) is a self-report instrument for measuring depressive symptomology in the general population. The CES-D consists of 20 items assessing both thoughts and affect experienced in the past week. Participants rate each item on a 4-point Likert-type scale ranging from "rarely or none of the time (less than 1 day)" to "most or all of the time (5-7 days)". Responses were scored from 0 to 3 and totaled to generate scores that could range between 0 and 60. The CES-D has been found to yield data with both high internal consistency and adequate test-retest reliability. Substantial evidence of construct validity has also been reported (Radloff, 1977; Radloff & Teri, 1986). Cronbach's alpha for all twenty items in the present study was .77.

Hopkin's Symptom Checklist. The Hopkin's Symptom Checklist (HSCL; Derogatis, et al., 1974a; Derogatis et al., 1974b) is a self-report instrument designed to assess five symptom dimensions: somatization, obsessive-compulsivity, interpersonal sensitivity, anxiety and depression. Strong internal

consistency and test-retest reliability have been reported on all five dimensions. A freely available 50-item version of the HSCL used in previous self-discrepancy research (see Higgins' review, 1999) was employed in this study. Participants were asked to indicate, by rating each item on a 5-point Likert-type scale ranging from 'not at all' (scored 0) to 'extremely' (scored 4) the extent to which each symptom bothered them during the past week. They were asked not to consider the presence of the symptoms on the day of participation, and responses were averaged such that scale scores could range from 0 to 4. The present study focused on the 6-item anxiety and 11-item depression sub-scales which yielded Cronbach's alphas of .83 and .81, respectively.

Results

Aggregate statistical analyses

Implicative dilemmas were computed from the repertory grid ratings following the algorithm described in the Introduction above. Results indicated that dilemmas were present in 67.0% of the participants' grids using the .20 salience criterion, and in 49.5% of the grids using the .35 criterion. Even at the .35 level, this percentage is considerably higher than the 34% of participants with implicative dilemmas in the non-clinical group in the 2004 study conducted by Feixas and Saúl. At the .20 level, the percentage of participants presenting with implicative dilemmas surpassed the 52.4% of participants with implicative dilemmas in the clinical group of the same study. These percentages compared favorably to the personal construct grids from the second archival data set above (73.5 for .20, 64.4 for .35) in which individuals rated their various selves (actual, ideal) from different perspectives. The new values were much higher than the percentages from the personal construct grids in the first archival data set (31.9% for .20, 19.6% for .35).

Analysis of the participants' grid data yielded an average of 3.75% implicative dilemmas at the .20 level ($SD = 4.13$) and 1.82% at the .35 level ($SD = 2.78$). The distributions at both salience levels were also highly positively skewed. Independent samples t-tests indicated that the percent dilemmas for this

new study were significantly higher than the percent dilemmas from the personal construct grids in the first archival data set for the .20 [$t(227) = 4.58$, $p < .001$, $\eta^2 = .08$] and .35 [$t(227) = 3.83$, $p < .001$, $\eta^2 = .06$] criteria. In contrast, the new values were lower than the corresponding percent dilemmas from the personal construct grids in the second archival data set at both the .20 [$t(222) = 2.89$, $p < .004$, $\eta^2 = .04$] and .35 [$t(222) = 3.70$, $p < .001$, $\eta^2 = .06$] criteria.

As shown in Table 2, the percentage of implicative dilemmas at the .20 level was significantly correlated with self-esteem, depression (as measured by the CES-D) and anxiety. As expected, greater percentages of implicative dilemmas were associated with lower self-esteem and higher depression and anxiety. At the .35 level, the percentage of implicative dilemmas was not significantly correlated with any of the measures of psychological well-being, although the correlation with anxiety ($r = .205$, $p < .052$) was nearly statistically significant.

Consistent with the analyses above for the second archival data set, percent dilemmas was regressed, separately, onto the measures of depression, anxiety, and self-esteem while controlling for the number of discrepant constructs (viz., the number of constructs on which the actual and ideal selves were rated on opposite sides of the 5-point scales). These 2-step hierarchical regression analyses allowed us to ascertain whether implicative dilemmas predicted psychological well-being above and beyond the number of discrepancies between the actual and ideal selves. The results of the analyses in Table 3 show that, while self-discrepancies were predictive of low self-esteem and high depression at both salience criteria (.20 and .35), percent dilemmas were uniquely predictive of only anxiety at the .20 level. The magnitude of this latter effect was also small, as percent dilemmas accounted for an additional 4.4% of the variance in the anxiety scores beyond the number of self-discrepant constructs. Finally, it should be noted that examination of each regression model for outliers, multicollinearity, and violations of statistical assumptions revealed only skewed distributions for the standardized residuals. Given the general robustness of statistical tests to violations of normality, no adjustments were made, and no other significant anomalies were found for the regression analyses.

Implicative Dilemmas

Unfortunately, the results did not reveal a general relationship between psychological well-being and implicative dilemmas. In order to elucidate these generally negative results at the aggregate level of analysis, we examined two participants'

grids that yielded relatively high percentages of implicative dilemmas. The first participant examined also reported a relatively high level of anxiety, while the second participant reported a relatively low level of anxiety.

Table 2: Zero-order Pearson correlations and descriptive statistics for percent implicative dilemmas and measures of depression, anxiety, and self-esteem for the novel data set

	Dilem _{.20}	Dilem _{.35}	RSEI	CESD	HSCL _{Dep}	<i>M</i>	<i>SD</i>
Dilem _{.20}						3.75	4.13
Dilem _{.35}	.848**					1.82	2.78
RSEI	-.213*	-.137				44.77	9.61
CESD	.223*	.118	-.498**			13.85	7.78
HSCL _{Dep}	.195	.124	-.499**	.710**		.80	.57
HSCL _{Anx}	.243*	.205	-.376**	.541**	.571**	.55	.62

Note. Rank-order correlations were highly similar to Pearson correlations. RSEI = Rosenberg Self-Esteem Inventory; CESD = Center for Epidemiological Study Depression scale; HSCL = Hopkin's Symptom Checklist. Dilemmas were scaled as percentages. * $p < .05$, ** $p < .01$

Table 3: Hierarchical regression models predicting measures of well-being from self-discrepancies and percent dilemmas at the .20 and .35 salience levels

Dependent Variable	Step 1 Actual-Ideal Discrepancies			Step 2 Percent Implicative Dilemmas			
	R^2	<i>F</i>	$p \leq$	R^2	$R^2 \Delta$	<i>F</i>	$p \leq$
.20 Criterion							
RSEI	.082	7.96	.006	.082	.006	.578	.449
CESD	.020	1.75	.189	.051	.031	2.79	.099
HSCL _{Dep}	.048	4.46	.037	.057	.009	.880	.351
HSCL _{Anx}	.015	1.39	.250	.059	.044	4.16	.045*
.35 Criterion							
RSEI	.082	7.96	.006	.082	.000	.032	.857
CESD	.020	1.75	.189	.024	.004	.358	.551
HSCL _{Dep}	.048	4.46	.037	.049	.001	.119	.731
HSCL _{Anx}	.015	1.34	.250	.043	.029	2.63	.108

Note. Degrees of freedom for the different models ranged from 86 to 89, due to missing data.
* $p < .05$

Individual grid results: two cases

Case one: Michi

The first case we considered is that of an Asian female, age 20, with a reported anxiety level of 1.17, substantially higher than the mean ($M = .55$, $SD = .62$), and with 13 identified implicative dilemmas at the .35 salience criterion and 14 at the .20 salience criterion. She reported low depression (CESD = 13; Hopkin's Depression Scale = .45), and relatively low self-esteem (RSEI = 32).

Michi's grid can be seen in Figure 1. A principal components analysis conducted on her grid yielded three strong components that explained 78.83% of the variance in her grid ratings. A plot of the first two components from Michi's grid (see Figure 2) revealed that she construed herself primarily as serious, shy, nervous, and unfriendly. Her ideal self was orthogonal to her actual self in the first two dimensions of her grid; that is, her actual self loaded highly on the first component while her ideal self loaded highly on the second component. Her ideal self was construed primarily as highly intelligent.

Michi was self-discrepant on five of the constructs in her grid (i.e., she rated her self and her ideal self on opposite sides of the 5-point rating scale) and self-congruent on six constructs. The self-discrepant constructs are marked with asterisks (e.g., ***be shy*) in Figure 1, and the self-congruent constructs are enclosed in brackets (e.g., [*look stupid*]). Idiogrid reports dilemmas in a user-friendly sentence format, for example:

- *Myself is construed as "act not in friendly way"
... whereas My Ideal Self is construed as "act in friendly way"*

The dilemma is a(n) "act in friendly way" person tends to be a(n) "likes to go crazy" person ($r = 0.51$)

- *Myself is construed as "be shy"
...whereas My Ideal Self is construed as "be social"*

The dilemma is a(n) "be social" person tends to be a(n) "look stupid" person ($r = 0.51$)

Examination of Michi's 13 dilemmas (.35 criterion) revealed that all involved the self-congruent constructs of *serious*, *stable*, *likes to go crazy*, and *look*

stupid. These constructs can be combined into a superordinate construct that contrasts serious stable people with foolish (i.e., *looks stupid*) crazy people. This new construct, or dimension, is drawn as a dotted line in Figure 2. It can be seen that most of the self-discrepant constructs involved in Michi's implicative dilemmas are highly and positively related to this superordinate dimension; that is, serious stable people are typically construed as *be shy*, *nervous*, and *act not in a friendly*. Keeping in mind Michi's high reported level of anxiety, it is also telling that the undesired pole of *nervous* is *happy* (see Figure 1). While many might construe *sad*, a term that decidedly carries a negative connotation, as the opposite of *happy*, Michi places it in opposition to *nervous* which is associated with the desired traits of seriousness and stability. According to this logic, then, the price of being serious and stable is happiness, and if she were to become happy she would risk casting herself into a world of uncertainty as a foolish crazy person. Unless she can alter her construct system to break or weaken the connections between her self-discrepant constructs (*be shy*, *nervous*, and *act not in a friendly way*) and the superordinate construct (*serious stable vs. foolish crazy*), or unless she can subordinate her self-discrepant constructs to the *happy/nervous* construct, or perhaps reevaluate her contrasting nervousness with happiness, the delicate balance of her construct system, and, in fact, her identity, will likely prevent her from construing herself as a happy, social, friendly person.

	Myself	My	Ideal	Self	1. Yutaka	2. president	3. teachers	4. Mr. Tanaka	5. Mihoko	6. Ms. Hiyashi	7. Jenna	8. Dad	9. Mark	10. Mom	11. Nyoko	12. Mr. Hikaru	13. Ishi	14. Sorano	15. a Korean guy	16. Sister	
tall	-2	2	-2	.	.	1	1	0	-2	1	-1	-2	0	-2	-1	-2	0	0	0	0	short
cold-mind	1	-2	1	.	1	1	0	-1	0	1	1	-2	-2	0	-2	-2	-2	-2	-2	-2	friendly
act not in friendly way	2	-1	2	-1	1	2	-1	-2	1	-1	2	-2	-2	0	-2	-2	-1	-2	-1	-2	act in friendly way
look stupid	-2	-1	-1	-2	-1	-2	1	0	1	-2	-2	0	-1	-2	-2	1	-2	-2	-2	-2	look serious
genious	0	2	-1	.	-1	0	-2	1	0	0	1	0	0	2	2	0	0	-1	-1	-1	fool
be shy	2	-1	1	-2	0	2	-1	-2	-1	1	2	-2	-2	0	-2	-2	1	-1	-1	-1	be social
optimistic	-2	0	1	0	.	-1	2	2	2	0	0	-1	1	1	2	2	0	-1	-1	-1	pesimistic
serious	2	1	2	.	.	2	-1	0	-1	2	2	-1	0	0	0	-2	1	0	0	0	happy-go-lucky
very smart	1	2	0	0	-1	0	-2	0	0	0	2	0	2	2	2	1	1	0	0	0	stupid
stable	2	2	0	.	0	1	-2	1	1	0	2	0	0	2	1	-1	2	-1	2	-1	emotional
likes to go crazy	-2	-2	0	.	0	-2	0	1	0	-2	-2	0	1	-1	0	2	-2	0	0	0	calm
has self-confidense	0	2	-1	0	1	-1	0	1	2	-1	2	1	2	2	2	2	0	-1	-1	-1	is always nervous
be confident	0	0	1	2	1	1	1	0	2	-1	1	0	0	0	1	2	0	-1	-1	-1	have self-dought
neurovous	2	-1	-2	.	0	2	-1	-1	-1	1	1	-2	-2	-1	-2	-2	0	-1	-1	-1	happy

Figure 1. Repertory grid for first case, Michi. Scale values ranged from -2 to +2, and missing values are represented by periods.

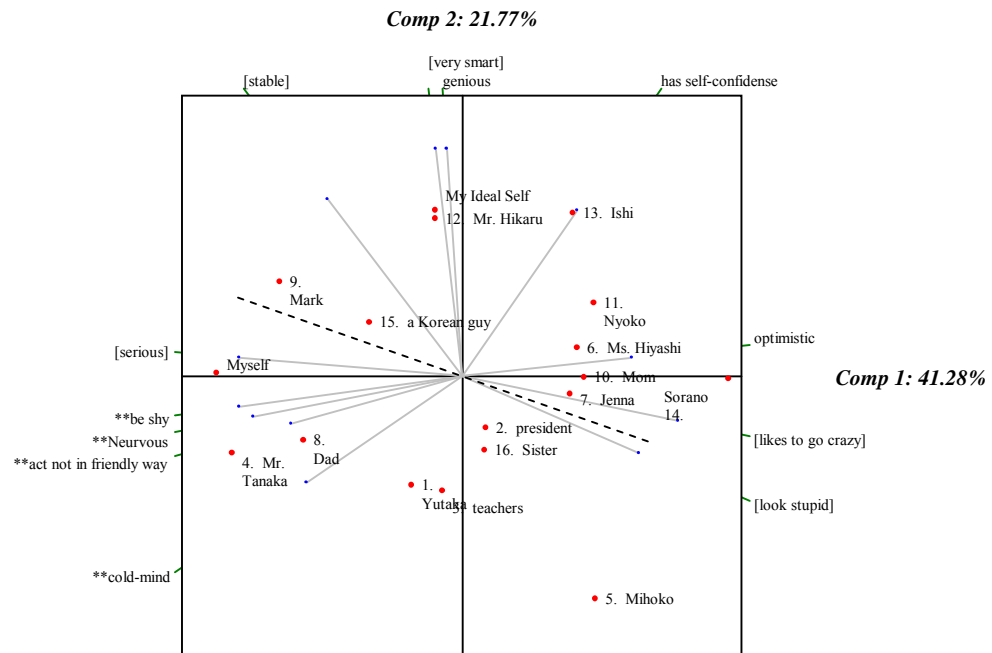


Figure 2: First two principal components from Michi's grid. Constructs are printed along the edge of the space, and elements are printed in the space. Constructs with asterisks are self-discrepant, whereas constructs enclosed in brackets are self-congruent.

Case two: Daniel

The second case is that of Daniel, a 19-year-old Caucasian male, whose grid revealed 7 implicative dilemmas at both the .20 and .35 salience criteria, and who reported no symptoms of anxiety. He reported low depression (CES-D = 13; Hopkin's Depression Scale = .45), and moderate self-esteem (RSE I= 37). His grid can be seen in Figure 3, and this case illustrates the way in which implicative dilemmas may actually function to protect one from anxiety. Though several dilemmas are identified within his grid, all of the discrepant constructs share a single theme. As can be seen in the ratings in Figure 3 and the principal component plot in Figure 4, Daniel construes himself as somewhat rude and uncaring and construes his ideal self as kind and helpful. As in Case 1, all of Daniel's implicative dilemmas balance upon a single congruent construct (*good vs. feeling bad*) rather than a single

discrepant construct; for example,

- *Myself is construed as "am rude to others" ...whereas My Ideal Self is construed as "treating them with respect"*

The dilemma is a(n) "treating them with respect" person tends to be a(n) "feeling bad" person ($r = 0.61$)

- *Myself is construed as "being rude" ...whereas My Ideal Self is construed as "polite"*

The dilemma is a(n) "polite" person tends to be a(n) "feeling bad" person ($r = 0.52$)

The cost of change that is too great for him to pay to close the discrepant gap is simply construed as *feeling bad* (the opposite of *good*). Kelly (1955, pp. 236-237) suggests that when a single concept, in

this case rudeness, is construed in opposition to several other concepts, in this case, kind, caring, helpful, etc., that the shared pole likely represents a default (or predictable) mode of behaving for the person. In other words, when it becomes inconvenient, difficult, or uncomfortable for Daniel to be kind, caring or helpful, he likely resorts to rudeness because it is familiar and comfortable for him. Daniel's construct system and the implicative dilemmas identified therein provide what seems to be a straightforward understanding of why he reports such low anxiety though his grid reveals several dilemmas- they allow him to remain in a state in which he is not susceptible to negative emotions. His implicative dilemmas exist because his ideal self is susceptible to *feeling bad*, where his actual self is construed as *good*. The dilemmas represent a balance of values whereby feeling good is desired over feeling bad even if it means that he must remain in a state of self-discrepancy. It is interesting to note that Daniel, while he places himself in the midst of the people who play negative roles in his life and away from those in positive roles, he does

place himself in close proximity to 'Dad', whom he named as "the most honest person you know personally (other than yourself)." This might be taken up in several ways. One possible understanding of this is that the meaning of "honest" intended by the researchers when developing the roles differs from the meaning Daniel ascribes to the word. Where the researchers treated honesty as if a virtue, he might associate it with bluntness, or with "not sugar coating" things. In this case, it is perfectly reasonable, though it need not be, that a person who repeatedly construes himself as rude might also construe himself as honest. Another possible interpretation is that he gives honesty enough value to overcome the negative feelings that might be associated with construing himself along the same lines as those people in negative roles. Without knowing more about Daniel's relationship to his father (who, interestingly, also appears in the grid as a symbolic construct), and the meaning he ascribes to honesty, we must recognize that our interpretations are merely speculative.

	Myself	My	Ideal	Self	1. Sarah	2. Eric	3. Brian	4. Coach Minor	5. Michael	6. Tyler	7. Neal	8. Jake	9. Amanda	10. Grandpa	11. John	12. Coach Robbins	13. Dad	15. Blake	16. Aaron	17. Mom	
More Physically Fit	-1	1	0	1	1	0	1	1	1	0	0	0	1	0	0	2	1	1	1	1	Being Overweight
rude to everyone	0	-1	0	0	1	-1	1	1	0	2	-1	-2	0	-2	-1	0	0	0	0	0	gets along with every one
am rude to others	1	-1	0	1	2	0	2	2	0	2	-1	-1	1	-2	1	0	0	-1	-1	-1	treating them with respect
be rude	1	-1	0	1	2	0	2	2	1	2	-2	-2	1	-1	1	0	-1	-1	-1	-1	holding it in
Dad	2	0	0	-1	-2	.	-2	-2	-1	-2	.	0	-1	.	2	0	0	.	.	.	Keller
get mad easily	-1	0	0	1	1	0	1	2	0	2	-2	-2	1	0	2	1	0	0	0	0	holding in the anger
polite	-1	1	0	-1	-2	0	-1	-1	0	-2	2	2	-1	1	-1	0	0	0	1	1	being rude
patient	-1	2	0	-1	-2	0	-1	-2	0	-2	1	2	-1	1	-1	0	0	0	1	1	rude
very caring	-1	1	0	0	-2	0	-1	-2	0	-2	2	1	0	1	-1	0	0	0	1	1	being rude all of the time
cautious	-1	0	0	-1	-2	0	-2	-2	0	-2	0	1	-1	0	-1	0	0	0	0	0	free
mean	1	0	0	0	2	-1	2	2	0	2	-2	-1	1	-2	1	0	-1	0	0	0	nice
helps everyone	-1	1	0	-1	-2	1	-1	-2	0	-1	2	1	-1	2	0	1	0	0	0	0	walking past them
help others	-1	1	0	-1	-2	0	-1	-2	0	-2	1	0	-1	2	-1	0	0	0	0	0	not helping out
good	1	1	1	1	2	0	2	2	1	0	0	.	2	0	0	1	0	0	0	0	feeling bad

Figure 3. Repertory grid for second case, Daniel. Scale values ranged from -2 to +2, and missing values are represented by periods.

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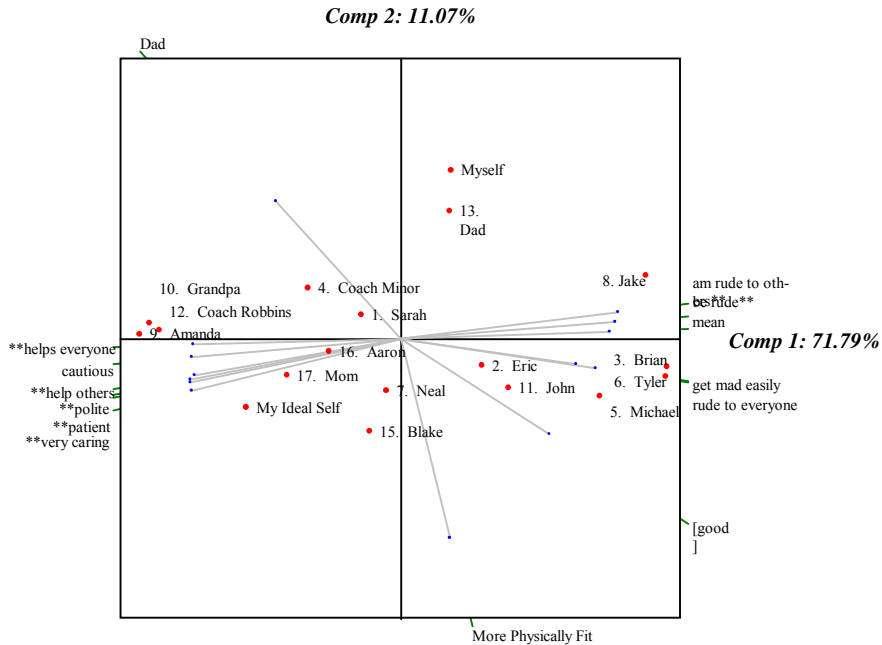


Figure 4. *First two principal components from Daniel's grid. Constructs are printed along the edge of the space, and elements are printed in the space. Constructs with asterisks are self-discrepant, whereas constructs enclosed in brackets are self-congruent.*

DISCUSSION

Feixas and Saúl (2004; see also Feixas, Saúl & Sanchez, 2000) have developed an intriguing method for measuring implicative dilemmas with the repertory grid. We examined their technique in two archival data sets and in a novel study and attempted to answer two questions. First, could implicative dilemmas uniquely predict psychological well-being? Unfortunately, in the second archival data set and the novel data set our results were largely non-significant. Although we found discrepancies between participants' actual and ideal selves to weakly predict high depression, high anxiety, and low self-esteem for some analyses, implicative dilemmas added little to the prediction of individual difference variation on the three measures of psychological well-being. Only in one analysis for the novel data

set were implicative dilemmas (determined at the .20 criterion) found to predict higher levels of anxiety above-and-beyond what could be predicted from self-discrepancies alone. Moreover, this one statistically significant effect was small in magnitude (increase in $R^2 = 4.4\%$).

These null results are consistent with those reported by Fernandes et al. (2005), who also studied college students. Given this population of individuals, one explanation for the current results and those of Fernandes et al. is range restriction, both in terms of age and presence of psychological distress. Generally, the participants in the second archival data set and the novel study reported low levels of anxiety and depression, high levels of self-esteem, and low percentages of implicative dilemmas. The distributions for the psychological well-being measures and percent dilemmas were also significantly

skewed. Such distributional properties of the observed data may have attenuated the estimated effect sizes. In other words, a more heterogeneous sample of individuals with respect to all of the measures may have yielded larger effects and supported the hypothesized relationships between implicative dilemmas and different aspects of psychological well-being. Feixas and Saúl's (2004) review of differences between clinical and non-clinical samples with regard to implicative dilemmas supports this interpretation.

Issues of validity regarding the self-report measures of anxiety, depression, and self-esteem could also be raised. While the Rosenberg Self Esteem Inventory, Center for Epidemiological Study Depression Scale, and Hopkin's Symptom Checklist are widely used in the psychological literature and have well-established psychometric properties, they were not developed within the framework of Kelly's (1955) theory. For instance, symptoms on the anxiety subscale of the Hopkin's Symptom Checklist such as 'trembling', 'feeling fearful', and 'heart pounding or racing', hardly seem to match Kelly's definition of anxiety as "the awareness that the events with which one is confronted lie mostly outside the range of convenience of his construct system" (p. 565). It is feasible that using an instrument designed on the basis of Personal Construct Theory, such as the Personal Construct Inventory (Chambers & O'Day, 1984, Watson, Winter & Rosotti, 1997), could yield more positive results.

Another explanation for the current null results that also stems from a consideration of validity can be found in the two individual grids from the novel study examined above. At least seven implicative dilemmas were found in both individual's grids, but one participant (Daniel) reported no anxiety symptoms while the other participant (Michi) reported a relatively high degree of anxiety. Careful examination of the implicative dilemmas in the context of Daniel's and Michi's grids revealed meaningful interpretations of their individual data. In the case of Michi, her relatively high level of anxiety made sense in light of her dilemmas. She seems to be caught in a struggle; she would like to revise the roles she allows herself to play. She sees herself as unsocial and nervous, and would like to be warm, friendly, and happy. However, Michi seems to feel that sociality is located at the top of a slippery slope leading to a complete loss of control. She construes

nervous as the opposite of *happy* and links it with many congruent constructs, most notably *stable*. It seems that Michi, faced with the disconcerting prospect of looking stupid and losing control, finds the possibility of a warm social self, along with happiness, to be necessary sacrifices to retain control. With respect to Daniel, his dilemmas seemed to be shielding him from anxiety. Analysis of his grid suggests that he believes he would be a better person if he were more polite, caring and helpful to others. As it is, despite the admittance that his ideal self would possess these virtues, he reports that he sees himself as someone who is generally rude and walks past others in need. Daniel's use of variations on the construct *rude* suggest, according to Kelly (1955, pp. 236-237), that this is his default mode of behavior to which he resorts when he finds himself unable to cast himself in a role more suitable to the occasion. Though we might expect to find Daniel experiencing anxiety associated with his many self-discrepancies, relatively high number of implicative dilemmas and constriction, he reports no anxiety. When considering the congruent construct upon which all of his implicative dilemmas are built, however, we find the desire to be a person who *feels good* apparently standing in the way of Daniel moving towards his ideal self. Intuitively, one is able to make sense of Daniel's 'story.' Where he would like to be someone who is affected and moved by the feeling and needs of others, he finds himself at a standstill, because, those who are affected leave themselves open to experiencing negative feelings as a result of their openness. Rudeness is his armor, and dilemmatic thinking keeps it in place.

Assuming these interpretations are valid, they undercut the hypotheses associated with the aggregate analyses...at least the hypothesized relationship between anxiety and implicative dilemmas. Repertory grid researchers are themselves often caught in the dilemma of having to use statistical forms of analysis designed to address hypotheses based on aggregates, while desiring to place as much focus as possible on the unique person's in the study. It may be the case that implicative dilemmas are highly relevant in a clinical setting, but that the manifestation of any discomfort associated with the dilemmas is not generally related to a particular symptom such as depression, anxiety, or self-esteem. Further aggregating symptoms (e.g., creating a total score from depression and anxiety scores) would only serve to

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bury individual differences further in the data. It may be then that the final testing ground for the validity of implicative dilemmas is the psychological clinic, where sufficient attention may be paid to the individuals and the unique dynamics of their construct systems.

Of course it may also be the case that one or more moderator variables are present and must be measured in order to reveal the relationship between implicative dilemmas and psychological well-being at the aggregate level of analysis. Two such variables are suggested through the comparison of Michi and Daniel. First, it may be that Michi experienced true actual-ideal self-discrepancies, while Daniel was not considering his ideal self to be *polite*, etc., but rather, was describing his 'ought self' (that is, his construal of other people's general expectations regarding himself). If this is the case he might experience momentary anxiety or regret in social events in which he finds himself unwilling to comply with others' expectations, but he would be content with his rudeness in the final analysis. Beginning with the work of Higgins (see his 1999 review), there is a long history of distinguishing between the ideal and ought selves in self-discrepancy research, and permitting participants to distinguish between these two selves may prove fruitful in improving the predictive validity of implicative dilemmas. Second, participants' perceived ability to close the gap between their actual and ideal selves was not measured in the current novel study. If people feel they cannot change themselves, implicative dilemmas are likely to have a consolatory effect, and thus, would not be expected to be associated with anxiety. Future studies might therefore include a measure of perceived self-efficacy regarding changes in self-concept.

The second question we wished to address regarded the efficacy of using a sentence-completion task to elicit personal constructs and to create a propitious context for the generation of implicative dilemmas. In both archival data sets a sentence-completion task was used to elicit personal constructs. In the novel study a sentence-completion task was also used, but it was specifically designed to generate constructs on which the participants would likely construe themselves as self-discrepant (e.g., "I am embarrassed when I act like I am _____"). The task was automated on Idiogrid, and the participants experienced no difficulties in completing their rep-

ertory grids. Analysis revealed that at least one implicative dilemma was present in as few as 19.6% of the grids in the first archival data set and as many as 73.5% of the grids in the second archival data set. In the novel data set, at least one dilemma was found in 67% of the participants' grids at the .20 salience criterion (49.5% for the .35 criterion). The percentage of dilemmas in the novel data set was 3.75 for the .20 criterion, which was greater than the corresponding percentage in the first archival data set and lower than the percentage in the second archival data set. These results show that the sentence-completion task can be used fruitfully to elicit constructs with the intent of measuring implicative dilemmas in a repertory grid. They also show that grid size and grid content may play important roles in the presence and number of dilemmas recorded. The personal construct grids in the first archival data set were comprised of 24 elements and 12 constructs (24E x 12C), which differed from the dimensions of the personal construct grids in the second archival data set (12E x 12C) and the grids in the new data study (18E x 14C). With regard to content, the differences between the second archival data set and the new study were most notable; specifically, in the second archival data set, the participants rated their actual, ideal, and ought selves from their own perspectives as well as from the perspectives of their parents (e.g., actual self from mother's perspective, ideal self from mother's perspective) and a significant other. The grids were thus comprised entirely of different selves. In the first archival data set and the novel study, the actual and ideal selves were rated along with other individuals who were known personally to the participants. Finally, the importance of grid content on the presence and proportion of implicative dilemmas was demonstrated by the small correlations between the Big Five grids and personal construct grids in the two archival data sets. These small correlations showed that a large percentage of implicative dilemmas in one type of grid (Big Five or personal construct) does not strongly imply a large percentage of dilemmas in the other type of grid. For the archival data sets, the elements were identical across the Big Five and personal construct grids, thus the grids differed only with respect to their constructs.

Another aspect of grid design that may play an important role in measuring implicative dilemmas is the scale employed in the rating process. In the cur-

rent novel study and both archival studies, we employed 5-point rating scales; whereas 7-point rating scales have been used in previous studies (see Feixas and Saúl's review, 2004). In the novel study we also permitted students to choose a 'does not apply' option to indicate if the element under consideration fell outside of the range of convenience of the personal construct (consistent with Kelly's range corollary, 1955). It is simply not known if such scale differences would negatively or positively impact the validity of the implicative dilemmas measure. Yet another issue to consider in future research is the method of determining the dilemmas themselves based on the rating scale employed. For instance, in Feixas and Saúl's work constructs were considered self-discrepant if the actual and ideal selves were rated more than two units apart on the 7-point rating scale. For example, suppose the actual self was rated '4' and the ideal self was rated '7' on the following scale:

Foolish 1 2 3 4 5 6 7 Wise

According to Feixas and Saúl the ratings would be self-discrepant. In the novel and archival studies above, however, such ratings would be considered 'undifferentiated' since the actual self is rated at the midpoint of the scale and cannot be said to be either *foolish* or *wise*. Consistent with Kelly's dichotomy corollary, we considered constructs to be self-discrepant in all three data sets only if the actual and ideal selves were clearly located on opposite sides of the rating scale. Given the high variability in the numbers of implicative dilemmas yielded from the novel and archival results above, however, it appears that grid content played the most important role in influencing the number of dilemmas. Still, different methods of determining self-discrepant constructs should be theoretically and empirically examined in future studies. The 0.20 and 0.35 salience criteria employed in determining the presence of an implicative dilemma also appear to be arbitrary and certainly warrant further investigation.

In conclusion, results from our studies failed to support general relationships between implicative dilemmas and depression, anxiety, or self-esteem when considered in the aggregate. All of our samples, however, suffered from range restriction, and questions regarding the appropriateness of the traditional self-report measures of psychological well-

being were raised. By examining two individual cases from the new data set, we also noted several potential limitations of approaching these hypothesized relationships through standard aggregate analysis. Future research on implicative dilemmas might do well to utilize different measures of psychological well-being that are more consistent with Personal Construct Theory. Studying a smaller number of individuals longitudinally in a clinical setting or in a period of transition (e.g., studying individuals going through a divorce) might also prove more fruitful for demonstrating the validity of implicative dilemmas. Lastly, as described by McAdams (1996) the 'self' of any human being is reflective of the context. That is to say, the self is not an enduring set of traits, but rather, the intersection of various events, expectations, people, circumstances, etc. Our analyses of different types of grids suggest that grid content plays an important role in the presence and number of implicative dilemmas. The context of the grid can be manipulated using the sentence-completion task to elicit constructs that are relevant to a given domain of experience (e.g., dating, academics, religious worship; Grice et al., 2004). Person-centered studies of implicative dilemmas could thus be designed in a manner that is consistent with McAdams', and indeed Kelly's (1955), dynamic view of the person.

AUTHORS' NOTE

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APPENDIX

Eight negative and eight positive role descriptions

1. A former boyfriend/girlfriend whom you now dislike
2. A person whom you consider to be unethical or immoral
3. A person in high school or middle school whom you did not like
4. The teacher or coach whom you did not like or who was a poor role model
5. The most dishonest person you know personally
6. A person whom you once thought was a friend but in whom you were badly disappointed.
7. A person with whom you have worked and did not get along with
8. A person in your family whom you consider to be a poor role model

9. A current or past romantic partner whom you still love
10. A person who upholds high ethical and moral standards (other than yourself)
11. A person in high school or middle school whom you liked
12. The teacher or coach whom you liked or thought was a good role model
13. The most honest person you know personally (other than yourself)
14. A current close friend (other than your romantic partner)
15. A person with whom you have worked and got along with well
16. A person in your family whom you consider to be a good role model

Incomplete Sentences

1. It is common to want to change things about your physical appearance. For me, it would be nice if I were _____.
2. I am embarrassed when I act like I am _____.
3. Often people behave in ways they don't particularly like. Sometimes I am disappointed to find myself acting like _____.
4. When I get emotional, I wish I wouldn't _____.
5. It is normal to sometimes envy other people. The people I sometimes envy are typically _____.
6. It is true that no one is perfect, and sometimes I really wish I wouldn't _____.
7. Generally speaking, other people think that I ought to be more _____.
8. If I had to describe myself in one word, I would say that I am _____.
9. One of the things I admire about Romantic Partner is that he or she is _____.
10. In order to make mature decisions in life, a person really needs to _____.
11. To qualify as a person I dislike, you must be the type of person who is _____.
12. The typical student at OSU is the type of person who enjoys _____.
13. Most people in America tend to _____.
14. When I go to parties, I generally feel _____.

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