

# The Pathoplastic Relationship Between Interpersonal Problems and Fear of Failure

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**ABSTRACT** This study advances the understanding of fear of failure (FF), a dispositional avoidance-oriented achievement motive, by employing interpersonal classification techniques to groups of individuals who fear failure in order to examine the pathoplastic relations between FF and interpersonal problems. Shame-based FF is thought to be related to the self-regulation strategies of appeasement and aggression, and these strategies are hypothesized to be associated with the interpersonal problems of Nonassertiveness and Vindictiveness, respectively. Using 2 independent samples ( $n_s = 60$  and 38) reporting high FF, interpersonal profiles were examined for the groups in their entirety and for cluster solutions within the larger samples. Results demonstrated that individuals high in FF exhibited 1 of 2 prototypical interpersonal profiles associated with Domineering/Vindictive or Nonassertive/Exploitable problems that correspond with the hypothesized aggression and appeasement regulation strategies. Consistent with the concept of pathoplasticity, these differences were not better accounted for by demographic, affective, motivational, personality, or attachment style characteristics of the samples.

Fear of failure (FF) is a multifaceted form of avoidance motivation that is linked with an acute affective sensitivity to experience shame and embarrassment (Atkinson, 1957; McGregor & Elliot, 2005). FF is associated with negative physical and mental health outcomes, defensive pessimism and self-handicapping (Elliot & Church, 2003), test anxiety (Elliot & McGregor, 1999), attentional biases and arousal when viewing failure-themed images (Duley, Conroy,

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Morris, Wiley, & Janelle, 2005), adoption of avoidance achievement goals (Conroy & Elliot, 2004), and generalized interpersonal distress (Conroy, Elliot, & Pincus, 2009). In this study, we extended the exploration of the relationship between FF and interpersonal functioning by examining whether individual differences in interpersonal problems reflect differential strategies for coping with the anticipated negative outcomes of failing (e.g., shame, relational consequences). This was accomplished by evaluating potential pathoplastic relations between FF and interpersonal problems utilizing two approaches to examining group differences on the interpersonal circumplex—the structural summary method for circumplex data (Gurtman & Balakrishnan, 1998; Gurtman & Pincus, 2003) and circular statistics (Mardia & Jupp, 1999). We anticipated that as a group, people high in FF would not exhibit a unitary, prototypical circumplex profile, but would instead cluster into distinct subgroups differentiated by their predominant interpersonal dysfunction.

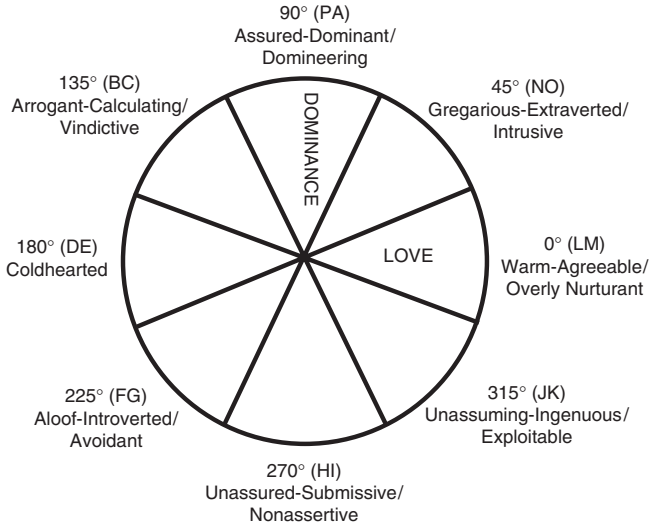
Conceptualized as an avoidance (vs. approach) achievement motive, FF is activated in situations where a failure to perform adequately is perceived to threaten an individual's ability to accomplish personally meaningful goals (Conroy, Willow, & Metzler, 2002) and sensitivity to shame motivates the individual to avoid failure (Atkinson, 1957; McGregor & Elliot, 2005). Consistent with a cognitive-motivational-relational model (Lazarus, 1991), responses to anticipated failure-related shame elicit action to meet the perceived situational demands. The specific types of self-regulatory strategies adopted in response to FF are often maladaptive and detrimental to performance (Elliot & Thrash, 2004). Strategies such as high levels of worry, low levels of optimism, defensive pessimism, self-handicapping, and test anxiety generally do more harm than good (Conroy, 2001; Conroy et al., 2002; Elliot & Church, 2003; Elliot & McGregor, 1999). Adopting goals focused on avoiding failure as opposed to approaching success has been associated with negative achievement strategies and outcomes as well as poorer academic performance (for a review, see Moller & Elliot, 2006).

Although the strategies just noted are generally cognitive in nature, it would be surprising if a motivational mechanism such as FF was not also related to interpersonal functioning, given it is grounded in shame—a social emotion with interpersonal consequences (Barrett & Campos, 1987; Tangney, 1995). Indeed, it is likely that interpersonal self- and field-regulation strategies

(Pincus, 2005a) are adopted by those high in FF when they are at risk of shame. Two shame-based responses have been reported in the literature: appeasement and shame-based rage (Gilbert & McGuire, 1998; H. B. Lewis, 1971). Appeasement responses to shame result in individuals displaying behaviors associated with loss of status or submissiveness such as a lowering of the head and deflating of the chest (Darwin, 1872/1969; M. Lewis, 1992; Tomkins, 1963). These behaviors serve to appease or mollify those who might have witnessed the failure or disgrace and would likely be associated with submissive interpersonal behavior (Exline, Ellyson, & Long, 1975; Gilbert, Pehl, & Allan, 1994). On the other hand, there are individuals in whom shame does not trigger appeasement behavior; instead these individuals respond to the loss of status with indignation and rage (Grosch, 1994; Levine, 2005; H. B. Lewis, 1971; Scheff & Retzinger, 1991). In shame-based rage, felt shame is bypassed, eliciting rage and aggression. The interpersonal behavior associated with rage and aggression would be characterized by hostile-dominance (Smith, Glazer, Ruiz, & Gallo, 2004; Yik & Russell, 2004).

The “interpersonal tradition” in psychology (e.g., Leary, 1957; Pincus, Lukowitsky, & Wright, in press; Sullivan, 1953) conceptualizes personality as “the relatively enduring pattern of recurrent interpersonal situations that characterize a human life” (Sullivan, 1953, pp. 110–111). The interpersonal approach to personality utilizes a two-dimensional model based on the metaconcepts of Agency and Communion to describe and measure interpersonal motivations as well as normal and abnormal interpersonal dispositions and behaviors (Horowitz, 2004; Wiggins, 2003). Agency refers to the notion of individuation, autonomy, and directedness, whereas Communion refers to associating, involvement with, and sharing with others. At the level of interpersonal dispositions, Agency and Communion are represented by Dominance and Love as orthogonal axes at the center of a circular Euclidean space defining the interpersonal circumplex (IPC; Leary, 1957; Wiggins, 1979; see Figure 1).

A specific IPC model is the interpersonal problems circumplex (IIP-C; Alden, Wiggins, & Pincus, 1990). The two dimensions of Dominance and Love anchor the IIP-C model and are associated with more problematic manifestations of interpersonal behavior. The poles of the agentic axis are Domineering versus Nonassertive, whereas the poles of the communal axis are Cold versus Overly Nurturant (see Figure 1). The IIP-C allows for the location of individual



**Figure 1**  
Interpersonal Circumplex/Inventory of Interpersonal  
Problems-Circumplex.

or group data in the interpersonal problem space. Scores on each axis provide a set of Cartesian coordinates to define the location. Circumplex measurement assumptions define the relationships between one location and another. The IIP-C also contains a general factor, which is equivalent to respondents' overall level of interpersonal distress (Tracey, Rounds, & Gurtman, 1996).

As described above, the motivation to avoid the emotional experience of shame for those high in FF spurs on action tendencies to stave off the aversive emotional state. Some of these strategies are likely to be interpersonal in nature (or at least reflected in interpersonal behavior), and if they are relied upon excessively or applied rigidly, interpersonal problems may develop (Leary, 1957). The interpersonal problems associated with submissiveness (i.e., appeasement) and hostile-dominance (i.e., aggression) are Nonassertiveness and Vindictiveness, respectively. Observed individual differences in regulation strategies associated with shame will likely be associated with differences in individuals' personalities or characteristic interpersonal styles. When a psychological system, such as FF, is not uniquely associated with one particular personality style, but is instead associated, across individuals, with multiple personality styles

that are in turn associated with different problematic behavioral manifestations, it can be said to have a pathoplastic relationship with personality.

When pathoplastic relationships exist, mutually influencing systems give rise to heterogeneous expressions of psychological states and behavior (Widiger, Verheul, & van den Brink, 1999). Pathoplasticity recognizes that the expression of certain maladaptive behaviors, symptoms, and mental disorders all occur in the larger context of an individual's personality (Klein, Wonderlich, & Shea, 1993; Widiger et al., 1999). Personality will influence the content and focus of other psychological mechanisms and will likely color the responses and coping strategies an individual chooses when presented with a stressor (e.g., Millon, 2000). This model has the potential for explaining the observed heterogeneity in phenotypic expressions of psychopathology and other psychological systems (Pincus et al., in press). Declaring that a pathoplastic relationship exists assumes that personality variables and another psychological disposition or disorder influence the expression of each other, but that neither one is the exclusive direct causal agent of the other, as might be the case in an etiological or spectrum relationship (Widiger et al., 1999). Importantly, a non-etiological relationship does not preclude each of these psychological systems from having an effect on the other, and they need not be mutually exclusive as each is molding the other, bending it like plastic. This is the relationship we attempted to confirm in the present study by identifying two interpersonal phenotypes among individuals reporting high levels of FF.

A number of investigations have found that individual differences in interpersonal problems exhibit pathoplastic relationships with pathological symptoms and mental disorders. For example, Social Phobia as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994) is a disorder characterized by intense fear of social situations. Distinct groups of social phobics have been identified based on unique sets of interpersonal problems (Kachin, Newman, & Pincus, 2001). These groupings are associated with Vindictive and Exploitable interpersonal problems, respectively, and are not accounted for by symptom severity or psychiatric comorbidity. This suggests that these different groups, while diagnostically homogeneous, may react to the perceived threat of social situations in entirely different fashions. Maladaptive interpersonal response styles to threatening social situations may play a

role in perpetuating the disorder by ensuring an unpleasant outcome (Carson, 1982).

Similarly, patients diagnosed with Generalized Anxiety Disorder (GAD) can be discriminated based on distinct clusters of interpersonal problems (Kasoff & Pincus, 2002; Salzer et al., 2008). Four clusters of GAD patients were identified reflecting predominantly Cold, Intrusive, Exploitable, and Nonassertive problems, respectively. Extending these findings beyond anxiety disorders, disordered eating has also demonstrated a pathoplastic relationship with interpersonal problems (Hopwood, Clarke, & Perez, 2007). Women with bulimic symptoms could not be defined by one interpersonal style; instead they varied broadly, suggesting that bulimia may be reciprocally related to a range of interpersonal difficulties.

Even maladaptive traits can be more distinctly understood when personality features are considered. Slaney, Pincus, Uliaszek, and Wang (2006) found that maladaptive perfectionism is associated with interpersonal problems, whereas adaptive perfectionism is not. The interpersonal problems experienced by maladaptive perfectionists were not unitary, but were better described by two distinct clusters of perfectionists with prominently Cold or Exploitable interpersonal problems (Slaney et al., 2006). In the cases of social phobia or maladaptive perfectionism, for example, the threat of social situations or the chronic discrepancy between a person's performance standards and their perceived level of performance interacts with an individual's personality to produce contrasting interpersonal expressions of maladaptive regulation strategies. Individual motivations such as FF also have the potential to be related to interpersonal functioning through pathoplasticity.

In two samples collected by Conroy et al. (2009), FF exhibited a pattern of positive correlations with all types of interpersonal problems and was positively related to general interpersonal distress in both samples. At first glance, this pattern of correlations between FF and interpersonal problem scores runs counter to our functionally derived hypotheses described above. It also raises questions as to whether there is a unitary prototypical interpersonal style associated with those who are high in FF. The lack of differentiation of FF in terms of specific interpersonal problems could be due to one of two alternative characteristics of the data. First, this lack of differentiation could be due to a complete lack of systematic interpersonal problem scores for those high in FF. Second, two or more distinct

groups of individuals with relatively opposing scores could be obscuring each other, resulting in the lack of differential associations in the sample. This second possibility would be in accord with a pathoplastic relationship between FF and interpersonal functioning (Pincus et al., in press). Conroy et al. anticipated that FF would exhibit more pronounced relations with Vindictive or Nonassertive interpersonal problems, but failed to find this relationship using regression analysis and dyadic structural modeling. These hypothesized problems are nearly theoretical opposites on the IPC, so it is possible that they serve to mask each other. Therefore, we applied interpersonal classification methods to individuals high in FF to examine pathoplasticity.

We hypothesized that although those who are high in FF are not defined by a uniform interpersonal profile, neither are they defined by a complete lack of systematic interpersonal expression. Specifically, we hypothesized that FF and interpersonal problems would be coupled in a pathoplastic relationship. Two conditions must be met to support a claim of pathoplasticity between interpersonal functioning and another psychological variable. First, the lack of interpersonal prototypicality and homogeneity as a group should give way to smaller clusters of individuals who demonstrate increased interpersonal prototypicality and homogeneity. Second, these groups should not differ on other psychological and demographic variables that could serve as alternative explanations for distinct patterns of interpersonal problems. In the event that the groups were to differ on a relevant third variable, it would be difficult to confidently assert that the differences in interpersonal group membership are a result of pathoplasticity and not variation on the third variable. Differences on a third variable would be consistent with a moderated relationship between interpersonal style and FF. For example, the groups should not differ in the severity of maladjustment, in this case FF, as that would merely demonstrate a moderator effect on interpersonal style. Nor should the groups differ in interpersonal distress, as that would merely demonstrate a moderator effect of interpersonal distress on interpersonal style.

Therefore, if individuals high in FF are subjected to a cluster analysis based on their responses to the IIP-C, we predict two distinct groups with characteristic interpersonal problem profiles will emerge. We anticipated that these clusters would conform to the theoretical predictions regarding responses to shame—one being

located at approximately 135° in the Vindictive (BC) octant reflecting aggression-based self-regulation and the other located at approximately 270° in the Nonassertive (HI) octant reflecting appeasement-based self-regulation. Furthermore, we predicted that these groups would not differ on other potential explanatory variables such as demographics, severity of FF or interpersonal distress, need for achievement, Five-Factor Model personality traits, attachment, affect, or life outcomes; this is necessary to meet the second condition of pathoplasticity. We also predicted that differences would be demonstrated in expected directions on other measures of interpersonal functioning (e.g., people with Nonassertive problems would also report greater interpersonal efficacy and values for Nonassertive behavior).

## METHOD

### Participants and Procedures

#### *Sample 1*

Participants were 397 undergraduate introductory psychology students from a large rural university who volunteered for this study in return for partial course credit. They volunteered for a study centered on a timed Sudoku puzzle solving competition (the winner to receive a monetary prize). This laboratory-based design was created to place participants in an evaluative situation where success and failure were possible. In addition to participating in the achievement task, participants completed the series of measures described below. Sixty (40 female, 20 male) participants were selected from the larger group for inclusion in analyses based on their high FF scores (greater than 1 *SD* above the mean). The mean age of participants was 19.0 years ( $SD = 1.2$ ), and the sample was largely Caucasian (78.3%), Asian American (11.7%), and African American (6.7%). No other racial or ethnic group comprised more than 5% of the sample.

#### *Sample 2*

Participants were 219 undergraduate introductory psychology students from a small private university who completed measures for this study in return for partial course credit. Thirty-eight participants (27 female, 11 male) were selected for inclusion based on their high FF scores (greater than 1 *SD* above the sample mean). Questionnaire packets and envelopes

were distributed in class and were completed by the participants at home and returned in a sealed envelope. The mean age of participants was 19.2 years ( $SD = 1.6$ ), and the sample was largely Caucasian (65.8%), Asian American (10.5%), and Other (10.5%); African American and Hispanic participants each comprised 5.3% of the sample and 1 participant did not report.

### Sample 1 Instruments

#### *Fear of Failure*

The 25-item Performance Failure Appraisal Inventory (PFAI; Conroy et al., 2002) was used to assess FF. Participants rated how strongly they believed that aversive, shame-related consequences of failing would occur in a particular context on a 5-point Likert scale ranging from  $-2$  (*do not believe at all*) to 0 (*believe 50% of the time*) to  $+2$  (*believe 100% of the time*). This measure provides five first-order scale scores—fears of experiencing shame and embarrassment, devaluing one's self-estimate, having an uncertain future, upsetting important others, and having important others lose interest—that can be averaged to form a higher-order FF score. Internal consistency for this sample was acceptable for full scale ( $\alpha = .94$ ) and first-order factor scores ( $\alpha$  range = .75–.86).

#### *Interpersonal Problems*

The 64-item Inventory of Interpersonal Problems–Circumplex Scales (IIP-C; Alden et al., 1990) was used to measure interpersonal problems. Thirty-nine of the items target behaviors that the respondent finds difficult to engage in and begin with the stem, “It is hard for me . . .”. The other 25 items target behaviors the respondent overexpresses and begin with the stem, “These are things I do too much . . .”. The 64-item version conforms to the interpersonal circumplex, via eight 8-item scales, Domineering, Vindictive, Cold, Avoidant, Nonassertive, Exploitable, Overly Nurturant, and Intrusive. Each item is rated on a 5-point Likert scale ranging from *not at all* to *extremely*. Internal consistency for octants was acceptable ( $\alpha$  range = .71–.87).

#### *Need for Achievement*

The 23-item Work and Family Orientation Questionnaire (Spence & Helmreich, 1978) was used to assess need for achievement. This measure provides scores representing the desire to work hard and do a good job (Work), the preference for challenging tasks and meeting internal ideals of performance (Mastery), and the enjoyment of competition and desire

to be better than others (Competitiveness). Internal consistency for the whole scale was .77 and for subscales was .64–.75.

### Sample 2 Instruments

#### *IIP-C (Alden et al., 1990)*

Sample 2 participants completed the IIP-C as previously described. Internal consistency for octants in this sample was acceptable ( $\alpha$  range = .77–.86).

#### *Fear of Failure*

The 5-item short form of the PFAI (Conroy et al., 2002) was used to assess general FF. Participants rated each item using the same 5-point scale used with the original PFAI. Additionally, the PFAI short form demonstrates a similar pattern of correlations with external measures (Conroy et al., 2002). Scores from this short form correlate strongly with scores from the long form (measured independently;  $r > .85$ ; Conroy, Metzler, & Hofer, 2003). Internal consistency for this sample was acceptable ( $\alpha = .76$ ).

#### *Additional Psychological Variables*

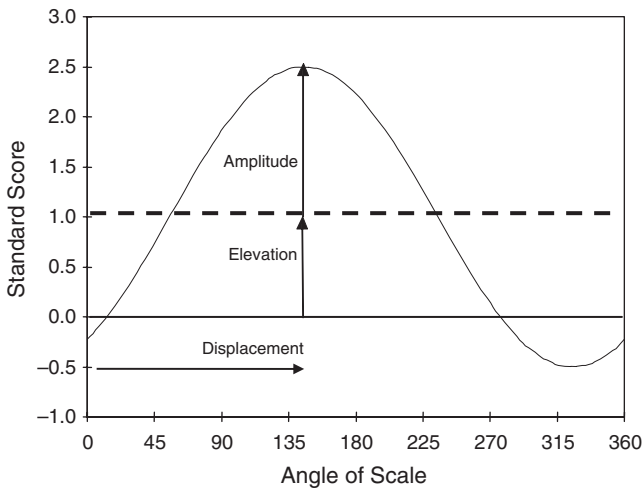
The 60-item NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) was used to assess the *Five-Factor Model (FFM) of personality* ( $\alpha$ s = .75–.87). In addition, the 44-item Big Five Inventory (BFI; John, Donahue, & Kentle, 1991), an alternative measure of the FFM, was used for convergence ( $\alpha$ s = .74–.87). The 10-item Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965) was used to assess *self-esteem* ( $\alpha = .83$ ). The 15-item Short Index of Self-Actualization (SISA; Jones & Crandall, 1986) was used to measure *self-actualization* over the past few days ( $\alpha = .65$ ). The five-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffen, 1985) was used as a measure of *subjective well being* ( $\alpha = .83$ ). *Adult attachment style* was measured using the 36-item Experience in Close Relationships Scale (ECRS; Brennan, Clark, & Shaver, 1998). Two 18-item subscales of Avoidance (AV) and Anxiety (AX) can be computed ( $\alpha$ s = .95 and .93). *Positive affect (PA)* and *negative affect (NA)* were measured using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants were asked to indicate the extent to which the 10 items on each scale described their feelings and emotions over the past few days ( $\alpha$ s = .86 and .87). The 20-item Center for Epidemiological Studies–Depression Scale (CES-D; Radloff, 1977) was used to assess *depression*. Items are rated for pres-

ence during the “last week” ( $\alpha = .87$ ). The six-item anxiety subscale from the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) was used to measure *anxiety symptoms* over the week prior to administration ( $\alpha = .81$ ). *Interpersonal values* were measured using the 64-item Circumplex Scales of Interpersonal Values (CSIV; Locke, 2000). Individual scores were ipsatized by subtracting mean level of responding. Without adequate norms available, ipsatizing retains IPC profile information while removing variance associated with nonsubstantive differential endorsement rates ( $\alpha s = .74-.84$ ). *Interpersonal efficacy* was measured using the 32-item Circumplex Scales of Interpersonal Efficacy (CSIE; Locke & Sadler, 2007). Like the CSIV, individual scores were ipsatized by subtracting mean level of responding ( $\alpha s .63-.83$ ).

## RESULTS

### Structural Summary Method for Circumplex Data

The Structural Summary Method is a way of analyzing circumplex data by modeling the pattern of octant means or correlations on a cosine-curve function. As seen in Figure 2, a circle can be modeled as a cosine function, thereby creating a more easily interpretable profile. Each profile can be defined with a series of parameters: angular



**Figure 2**  
Structural summary example.

displacement, elevation, amplitude, and a goodness-of-fit statistic  $R^2$  (Gurtman & Balakrishnan, 1998; Gurtman & Pincus, 2003). Displacement refers to the profile's angular shift, in degrees, from  $0^\circ$ , elevation to the mean score across octants, and amplitude to the differentiation of a profile. The  $R^2$  statistic represents the profile's goodness of fit to an ideal cosine curve and is calculated using the deviation sum of squares of the actual scores from predicted scores based on a perfect cosine curve with the same parameters. These parameters can summarize individual or group data on circumplex measures (Gurtman & Pincus, 2003). In the case of individual data, the score obtained on each octant of the circumplex measure is used. With group data, as is the case in this investigation, the averages of individual scores are taken for each octant.

This set of parameters allows for rapid interpretation of a circumplex profile (Gurtman & Balakrishnan, 1998). Angular displacement describes the "predominant theme" and has been understood as the "typology" (Leary, 1957) of the data's interpersonal nature. Taking the example given in Figure 2, with a displacement of  $135^\circ$ , this profile is associated with the Vindictive (BC) octant of the IIP-C. Elevation in the context of the IIP-C can be understood as mean level of interpersonal distress. High amplitude suggests a more clearly differentiated "theme," with a notable peak and valley. Values for the  $R^2$  statistic of .80 or greater indicate very good fit to a perfect cosine curve—below .70 indicate poor fit (Gurtman & Pincus, 2003). When analyzing group data using this method,  $R^2$  can further be interpreted as an indication of the interpersonal prototypicality of the group (Ansell & Pincus, 2004; Kachin et al., 2001; Salzer et al., 2008). Low  $R^2$  values are indicative of a group profile lacking circumplex shape and prototypical interpersonal theme (Haslam & Gurtman, 1999; Wiggins & Pincus, 1994).

### Interpersonal Problem Profiles of High Fear of Failure

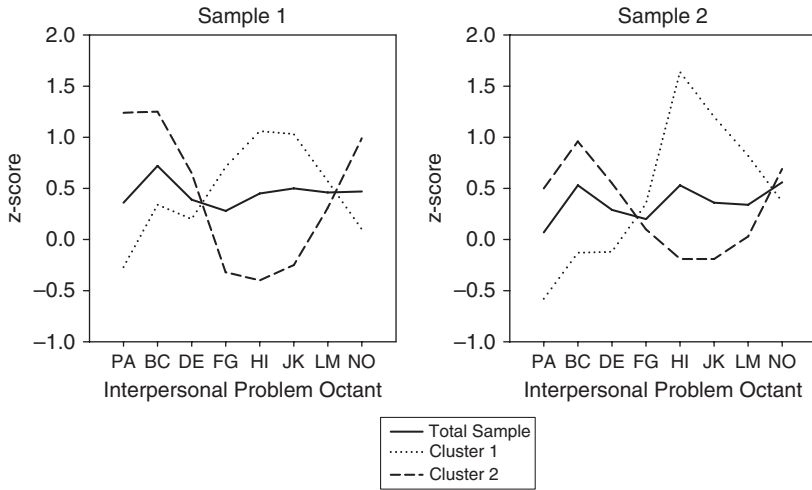
Using the structural summary method, an interpersonal profile was calculated for the group of 60 high FF participants selected from Sample 1. The parameters ( $R^2 = .09$ ; amplitude = .05) indicate that, as a whole, this group lacks interpersonal prototypicality. A non-prototypical profile is consistent with predictions that different problem profiles exist; however, it does not reveal the nature of this lack of uniformity. A low  $R^2$  value could be obtained either from an un-

**Table 1**  
Comparison of Structural Summary Variables

Group	Angle	Elevation	Amplitude	$R^2$
Sample 1				
High FF (Total Sample)	75.46°	.45	.05	.09
Cluster 1 (Submissive)	280.75°	.47	.57	.88
Cluster 2 (Dominant)	97.47°	.43	.92	.98
Sample 2				
High FF (Total Sample)	339.89°	.36	.05	.05
Cluster 1 (Warm-Submissive)	301.05°	.45	.92	.88
Cluster 2 (Hostile -Dominant)	115.36°	.31	.54	.89

systematically nonprototypical group, in which individual profiles were not similar to other profiles, or from a systematically nonprototypical group, in other words, a group made up of smaller prototypical groups, creating multiple circular distributions with offsetting interpersonal profiles. To test the possibility that multiple profiles exist, these high FF participants' scores on the two dimensions of the IIP-C (Dominance and Love) were cluster analyzed. Two-, three-, and four-cluster solutions were considered. Ultimately, a two-cluster solution was replicated across Ward's (1963) hierarchical clustering method and an agglomerative clustering method (SPSS K-Means [KM]) using squared Euclidean distances: 83.3% of Ward's Cluster 1 ( $n = 42$ ) were grouped into KM Cluster 1 ( $n = 35$ ) and 100% of Ward's Cluster 2 ( $n = 18$ ) were grouped into KM Cluster 2 ( $n = 25$ ). A chi-squared analysis indicated similarity of groupings across cluster algorithms ( $\chi^2 = 36.0, p < .001$ ).<sup>1</sup> Three- and four-cluster solutions were not as robust. Ultimately the KM Clusters were retained for subsequent analyses and conformed to predictions. As seen in Table 1, interpersonal problem profiles for Cluster 1 ( $R^2 = .88$ ) and Cluster 2 ( $R^2 = .98$ ) exhibited excellent

1. Although not a necessary condition to support a pathoplastic relationship, we examined IIP-C clusters in average ( $ns = 269$  and  $147$ ) and low ( $ns = 62$  and  $34$ ) FF subsamples to ascertain that our results did not merely reflect the typical interpersonal problems of our college student samples. In all cases, three- or four-cluster solutions were the most robust, and displacements did not consistently reflect Nonassertive or Vindictive profiles.



**Figure 3**  
Structural summary profiles of FF groupings.

goodness of fit to circumplex expectations and much larger amplitudes when compared to the group as a whole. Cluster 1 fell at  $280.75^\circ$  on the circumplex with an elevated peak indicative of submissive interpersonal problems. Cluster 2 fell at  $97.47^\circ$  with an elevated peak indicative of dominant interpersonal problems with a slight shift toward hostile-dominant interpersonal problems. In comparison to the high FF group as a whole with its low  $R^2$  value and minimal amplitude, these two clusters exhibited highly prototypical interpersonal definition.

Although these clusters were consistent with a priori predictions, replication was attempted with an independent sample to strengthen confidence in the obtained results. In Sample 2, the parameters for the high FF group were, as with Sample 1, inconsistent with a unitary and prototypical interpersonal problem profile (see Table 1). Using the centroids from the Sample 1 clusters, the high FF group selected from Sample 2 was cluster analyzed with an agglomerative clustering method (SPSS K-Means) that used Euclidian distances to allot cases to clusters based on their scores on the two dimensions of the IIP-C (Dominance and Love). Interpersonal problem profiles for Cluster 1 ( $R^2 = .88$ ) and Cluster 2 ( $R^2 = .89$ ) in this sample again exhibited excellent goodness of fit to circumplex expectations and much larger amplitudes (see Table 1) when compared to the group as

a whole. Cluster 1 ( $n = 15$ ) fell at  $301.05^\circ$  on the circumplex with an elevated peak indicative of warm-submissive interpersonal problems. Cluster 2 ( $n = 23$ ) fell at  $115.36^\circ$  on the interpersonal circumplex with an elevated peak indicative of hostile-dominant interpersonal problems. In comparison to the high FF group as a whole in this sample, with its low  $R^2$  value and minimal amplitude, these two clusters exhibited highly prototypical interpersonal definitions.

A visual summary of these results is provided in Figure 3. Beginning with the solid line that represents the interpersonal problems of the high FF samples as a whole, the profiles appear relatively flat and not sinusoidal. In stark contrast, the dotted and dashed lines that represent Clusters 1 and 2, respectively, are clearly differentiated and are markedly sinusoidal. Furthermore, as was described before, a pattern of two circular distributions (i.e., the dotted and dashed profiles) cancel each other out, resulting in a flat undifferentiated profile (i.e., the solid line profile). Each of the clusters' profiles is prototypical of their respective interpersonal themes, whereas the combined profile is not prototypical of any theme.

### Comparing Groups Using Circular Statistics

Although the angular displacements for the corresponding clusters in each sample as calculated by the structural summary method were similarly located, they were not identical. In fact, the octants in which Clusters 1 (HI/JK) and 2 (PA/BC) fell were adjacent rather than identical locations. The structural summary method does not allow for direct between-group comparisons of interpersonal data. To explicitly compare our samples, the circular means, circular variances, and 95% circular confidence intervals (CI) were calculated for each cluster based on angular dispersion of their participants (for the relevant formulae, see Gurtman & Pincus, 2003; Mardia & Jupp, 1999). CIs allow for a direct comparison between each corresponding cluster, with the expectation that each sample's corresponding pair of CIs will overlap.

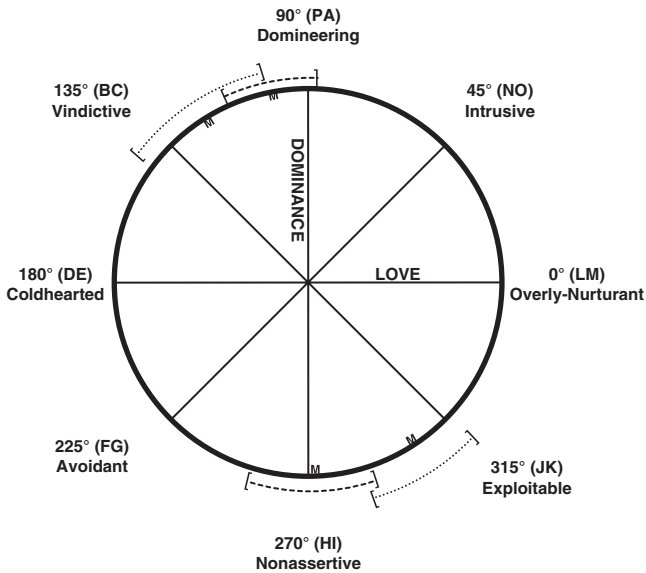
It is important to note that the angular locations of each group as defined by a circular mean will differ slightly from the angular displacement given by the structural summary method. The reason is that circular means are calculated using only angular locations and not the vector length from the origin of the circle. By not taking

**Table 2**  
Circular Statistics

Sample	Cluster 1	Cluster 2
Sample 1		
Mean	271.55°	101.69°
Variance	55.46°	35.21°
95% CI	253.18°–289.93°	87.89°–115.50°
Sample 2		
Mean	302.58°	121.94°
Variance	26.11°	47.36°
95% CI	288.91°–316.26°	102.58°–141.29°

*Note.* All values reported in degrees.

vector length into account, all angles are accorded equal weight in the equation. The structural summary method accounts for data that differ not only in angular location but also in vector length, thus



**Figure 4**

Circular statistics of FF clusters. Capital M indicates cluster means. Brackets indicate upper and lower bounds of 95% CIs. Dashed lines represent Sample 1 clusters. Dotted lines represent Sample 2 clusters. All angular locations are approximate.

according differing weights to each subject's angle when calculating the overall displacement for the group. By defining groups based on circular statistics some of the information given by the structural summary method is lost, but what is gained is the ability to directly compare separate groups (Wright, Pincus, Conroy, & Hilsenroth, in press).

Table 2 and Figure 4 display the circular means, angular variances, and 95% CIs for each group's corresponding clusters. Each corresponding cluster shares angular overlap across the two samples. The 95% CIs for Cluster 1 overlap by  $1.02^\circ$  whereas the 95% CIs for Cluster 2 overlap by  $12.92^\circ$ . Although corresponding clusters are located in adjacent octants and the two Cluster 1 CIs overlap by only  $1.02^\circ$ , both corresponding clusters' circular means differ by less than an octant's standard width (i.e.,  $45^\circ$ ). Given that these results are consistent with our hypotheses reflecting different behavioral strategies for regulating shame (i.e., appeasement, aggression), the clusters will hereafter be referred to as the *Appeasers* (Cluster 1: submissive, warm-submissive) and the *Aggressors* (Cluster 2: dominant, hostile-dominant).

#### Comparison of Clusters on Interpersonal Variables

By definition, the two clusters derived from each sample differed on the interpersonal problem octants and dimensions as measured by the IIP-C—a pattern evidenced by the means presented in Table 3. Sample 1 clusters differed on the Dominance dimension whereas the Sample 2 clusters differed on both the Dominance and Love dimensions. As predicted, elevation was not significantly different across clusters. Also as predicted, significant differences on the CSIV and CSIE reflected interpersonal distinctions between Appeasers and Aggressors (see Table 4).

#### Comparison of Clusters on Other Variables

Central to the demonstration of a pathoplastic relationship is the rejection of alternative explanations for the differential cluster membership. If clusters differ reliably on other potentially explanatory variables the relationship between interpersonal problem clusters and high FF might merely be the reflection of a third variable's influence. As expected, the clusters differed on agreeableness (a trait

**Table 3**  
 Comparisons of High Fear of Failure Interpersonal Clusters on  
 Interpersonal Problems

	Appeasers	Aggressors	<i>t</i>	<i>d</i>
Structural summary scores				
Elevation				
Sample 1	0.47 (0.48)	0.43 (0.64)	0.23	0.07
Sample 2	0.45 (0.36)	0.31 (0.98)	0.53	0.18
Amplitude				
Sample 1	0.87 (0.50)	1.17 (0.42)	- 2.52*	0.64
Sample 2	1.01 (0.48)	0.79 (0.36)	1.58	0.54
Dominance				
Sample 1	- 0.56 (0.52)	0.91 (0.41)	- 11.86**	3.08
Sample 2	- 0.79 (0.45)	0.48 (0.45)	- 8.51***	2.82
Love				
Sample 1	0.11 (0.64)	- 0.12 (0.76)	1.25	0.33
Sample 2	0.47 (0.47)	- 0.23 (0.53)	4.15***	1.38
Octant scores				
Domineering (PA)				
Sample 1	- 0.27 (0.55)	1.24 (0.86)	- 8.25***	2.17
Sample 2	- 0.58 (0.50)	0.50 (1.00)	- 3.86***	1.28
Vindictive (BC)				
Sample 1	0.34 (0.93)	1.25 (1.14)	- 3.41***	0.89
Sample 2	- 0.13 (0.55)	0.96 (1.42)	- 2.82**	0.94
Cold (DE)				
Sample 1	0.20 (0.96)	0.65 (1.45)	- 1.47	0.38
Sample 2	- 0.12 (0.54)	0.55 (1.47)	- 1.68	0.56
Socially Avoidant (FG)				
Sample 1	0.71 (1.00)	- 0.32 (0.86)	4.19***	1.09
Sample 2	0.35 (0.57)	0.10 (1.04)	0.35	0.28
Nonassertive (HI)				
Sample 1	1.06 (0.80)	- 0.40 (0.94)	6.48***	1.70
Sample 2	1.64 (0.91)	- 0.19 (1.13)	5.26***	1.74
Exploitable (JK)				
Sample 1	1.03 (0.94)	- 0.25 (0.78)	5.57***	1.46
Sample 2	1.20 (0.69)	- 0.19 (1.20)	4.07***	1.35
Overly Nurturant (LM)				
Sample 1	0.57 (1.00)	0.31 (0.93)	0.99	0.27
Sample 2	0.82 (0.79)	0.03 (1.07)	2.47*	0.81
Intrusive (NO)				
Sample 1	0.10 (0.91)	0.99 (1.01)	- 3.56***	0.93
Sample 2	0.37 (0.99)	0.69 (1.27)	- 0.83	0.27

**Table 4**  
Comparison of High Fear of Failure Interpersonal Clusters

	Appeasers	Aggressors	$t/\chi^2$	$d/\phi$
Demographic characteristics				
Age				
Sample 1	18.86 (0.97)	19.20 (1.50)	- 1.07	0.26
Sample 2	19.20 (1.32)	19.13 (1.76)	- 1.07	0.28
Gender				
Sample 1	71.4% Female	60.0% Female	0.86	0.12
Sample 2	86.7% Female	60.9% Female	2.94	0.27
Achievement motives				
Fear of Failure				
Sample 1	0.72 (0.21)	0.86 (0.36)	- 1.69	0.50
Sample 2	1.15 (0.26)	1.35 (0.34)	- 1.95	0.64
FSE	1.22 (0.36)	1.25 (0.41)	- 0.29	0.08
FDSE	0.83 (0.59)	0.90 (0.54)	- 0.48	0.12
FUF	0.87 (0.51)	1.14 (0.61)	- 1.85	0.49
FIOLI	0.14 (0.61)	0.28 (0.69)	- 0.85	0.22
FUIO	0.55 (0.66)	0.66 (0.68)	- 0.63	0.16
WOFO–Total	3.74 (0.37)	3.89 (0.47)	- 1.50	0.36
WOFO–Mastery	3.03 (0.57)	3.28 (0.72)	- 1.49	0.39
WOFO–Work	4.39 (0.42)	4.27 (0.37)	1.13	0.30
WOFO–Competitiveness	3.78 (0.66)	4.11 (0.67)	- 1.90	0.50
Personality				
Openness				
NEO	45.93 (6.49)	44.61 (7.48)	0.56	0.19
BFI	40.53 (5.46)	39.09 (7.17)	0.66	0.22
Conscientiousness				
NEO	44.66 (5.96)	42.91 (8.61)	0.69	0.23
BFI	32.93 (5.23)	31.39 (7.05)	0.73	0.24
Extraversion				
NEO	42.33 (6.04)	41.30 (8.41)	0.41	0.14
BFI	23.67 (4.64)	26.04 (8.25)	- 1.01	0.34
Agreeableness				
NEO	48.07 (5.09)	41.13 (5.80)	3.78**	1.25
BFI	39.20 (3.03)	32.87 (5.18)	4.27**	1.42
Neuroticism				
NEO	41.67 (8.89)	40.61 (9.20)	0.35	0.12
BFI	27.60 (6.70)	27.30 (7.25)	0.13	0.04

(Continued)

Table 4 (Cont.)

	Appeasers	Aggressors	$t/\chi^2$	$d/\phi$
Attachment				
Avoidant	71.40 (6.31)	69.04 (3.43)	1.49	0.50
Anxious	74.67 (8.78)	76.83 (8.28)	-0.77	0.25
Affect				
Positive Affect	45.80 (7.15)	47.74 (10.10)	-0.64	0.21
Negative Affect	36.13 (12.01)	37.00 (13.31)	-0.20	0.07
Depression	61.60 (21.26)	61.35 (17.95)	0.04	0.01
Anxiety	18.80 (8.32)	17.17 (8.05)	0.60	0.20
Subjective Well-Being				
Self-Esteem	3.25 (0.72)	3.74 (0.59)	-2.26*	0.76
Self-Actualization	47.60 (5.19)	50.78 (6.83)	-1.54	0.51
Satisfaction with Life	22.13 (4.79)	22.00 (6.06)	0.07	0.02
Interpersonal Values				
PA	0.26 (0.43)	0.41 (0.47)	-0.97	0.33
BC	-1.10 (0.49)	0.64 (0.54)	-2.62**	3.33
DE	-1.42 (0.48)	-1.21 (0.51)	-1.27	0.42
FG	-0.32 (0.51)	-0.49 (0.69)	0.78	0.27
HI	-0.06 (0.47)	-0.37 (0.62)	1.64	0.55
JK	0.94 (0.39)	0.56 (0.42)	2.71**	0.93
LM	0.91 (0.37)	0.88 (0.55)	0.15	0.06
NO	0.80 (0.41)	0.86 (0.55)	-0.36	0.12
Interpersonal Efficacy				
PA	-1.05 (1.49)	-0.24 (1.36)	-1.72	0.57
BC	-1.73 (0.95)	-0.86 (1.09)	-2.53*	0.84
DE	-2.00 (0.98)	-0.36 (1.15)	-4.66***	1.51
FG	0.88 (1.27)	-0.32 (1.97)	2.09*	0.69
HI	0.67 (1.34)	-0.11 (1.42)	1.69	0.56
JK	2.02 (0.79)	1.15 (0.86)	3.13**	1.04
LM	1.44 (0.81)	0.76 (0.92)	2.32*	0.77
NO	-0.25 (1.05)	-0.03 (1.14)	-0.58	0.20

*Note.* FF = fear of failure, FSE = fear of experiencing shame and embarrassment, FDSE = fear of devaluing one's self-estimate, FUF = fear of having an uncertain future, FIOLI = fear of important others losing interest, FUIO = fear of upsetting important others, WOFO = Work-Oriented Family-Oriented Inventory, NEO = NEO-FFI, BFI = Big Five Inventory.

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

with significant interpersonal relevance), and corresponding interpersonal measures. There were no significant differences between clusters in demographic characteristics, achievement motives, per-

sonality traits unassociated with interpersonal behavior, attachment, or affect. (see Table 4).

## DISCUSSION

This study extends the findings associating achievement motivation with interpersonal problems (Conroy et al., 2009) and broadens the pathoplasticity literature by demonstrating how personality can interact with a motivation system to produce differing strategies for coping with similar stressors (cf. Winter, John, Stewart, Klohnen, & Duncan, 1998). Using two independent samples, we were able to satisfy the two conditions for demonstrating a pathoplastic relationship between interpersonal problems and FF. First, both samples of individuals high in FF demonstrated poor interpersonal prototypicality. Their scores on the IIP-C did not conform to a geometrically defined pattern that would be expected based on a circumplex structure. However, when each sample was subjected to cluster analysis, two groups emerged whose reported interpersonal problem profiles evidenced clear prototypicality. The low prototypicality of the samples as a whole was a function of the offsetting nature of the two circular distributions in each sample.

The displacements of the two clusters fell in the PA and HI octants in Sample 1 and the BC and JK octants in Sample 2. On the whole, these are consistent with problems associated with aggression and appeasement regulation strategies. Using circular statistics, corresponding groups did not differ significantly in their angular displacements across samples. Given the arbitrary division of the IPC into octants (Carson, 1996), the respective adjacent clusters of Aggressors (PA, BC) and Appeasers (HI, JK) were well within 45° of each other. Taken together, the structural summary analyses and circular statistics enhance group comparisons on the circumplex by quantifying both the prototypicality of interpersonal problem profiles and the interpersonal homogeneity of cluster membership (Wright et al., 2009). What is perhaps most impressive about the cluster profiles that emerged is that we were able to predict them a priori based on qualitative observations of shame responses (H. B. Lewis, 1971; M. Lewis, 1992). These results not only add to the literature on pathoplasticity, they also provide further evidence supporting the construct validity of FF as a

shame-based achievement motivation (Atkinson, 1957; McGregor & Elliot, 2005).

Second, to fully satisfy our initial contention of pathoplasticity, we compared the groups on variables that have previously been related to FF and the IPC. No other psychological variable emerged as a strong contender for explaining the group differences, providing further support for pathoplasticity. Differences explained by a theoretically unincorporated (e.g., noninterpersonal) third variable would suggest a relationship between FF and interpersonal problems characterized by interaction/moderation and not pathoplasticity. Gender differences did not emerge; women were no more likely than men to be classified as Aggressors or Appeasers. Further, cluster membership was not related to achievement motives, attachment style, affect, or life outcomes. Multiple measures of the FFM demonstrated an identical pattern of differences on the Agreeableness dimension, and no other differences on theoretically unrelated dimensions, most notably Neuroticism. Previous research relating the FFM to the IPC (McCrae & Costa, 1989; Pincus, 2002) has demonstrated that the Agreeableness dimension of the FFM is closest to the axis between JK and BC on the IPC. Given these previous findings, a difference between Aggressors and Appeasers on Agreeableness could be expected based on common interpersonal content. The direction of the difference conforms to expectations, with Appeasers reporting higher Agreeableness than Aggressors. Finally, very similar patterns of differences were found between the octants of the IIP-C, CSIV, and CSIE, rounding out the interpersonal picture by demonstrating that these individuals have adopted interpersonal strategies that they value and feel efficacious in employing, potentially to a problematic degree. Consistency in results of IPC-based measures provides a picture of these groups that is consistent across levels of interpersonal functioning (Locke, 2000). This finding adds to the pathoplasticity model by broadening the domains of interpersonal functioning to include both values and efficacy in addition to problem type, further substantiating the claim that it is truly an individual's underlying personality that is coloring their avoidance motivation in this manner.

In summary, we take these results to be evidence for the pathoplastic relationship between personality and the avoidance-based motivation of FF. We see that high FF, although influencing personality by being related to interpersonal problems and distress

generally (see Conroy et al., 2009), is not uniquely related to one type of interpersonal style, instead demonstrating multifinality (i.e., aggression or appeasement) in the outcome, presumably based on an individual's underlying interpersonal style. The manner in which this mutually influencing system unfolds is presumed to be through the adoption of interpersonal regulation strategies aimed at diffusing the anticipation of shame. These strategies tend to fall into one of two types for those with a heightened sensitivity to the shame associated with failure: aggression or appeasement. These strategies become problematic when they are enacted in an extreme and/or rigid way, leading to elevated interpersonal problem profiles. Knowing that an individual is high in FF does not tell the whole story, as it is through personality, and more specifically characteristic interpersonal functioning, that regulation strategies will be filtered, leading to very different outcomes. Therefore, we encourage practitioners of all types who work with those high in FF or those who are otherwise highly sensitive to anticipated shame to broaden the lens of their assessment to include interpersonal functioning as well.

Additionally, this study extends examination of interpersonal pathoplasticity to the motivational domain. Previous research has examined interpersonal pathoplasticity in mental disorders (e.g., Hopwood et al., 2007; Kachin et al., 2001; Salzer et al., 2008) and in maladaptive traits (Slaney et al., 2006). In these previous studies, specific a priori hypotheses regarding the number and location of interpersonal subgroups were not offered. In the current study, synthesis of theory and qualitative observations pertaining to FF, shame, and their links allowed us to make a priori predictions suggesting the existence of two substantive groups associated with specific types of interpersonal problems. Therefore, these clusters might be thought of as FF subtypes, each exhibiting their own prototypical ways of responding to their identified sources of stress. The concept of interpersonal pathoplasticity may serve as a meaningful template for integration of theory and research on personality, psychopathology, motivation, affect, and behavior.

Some limitations of the current study included the relatively small sample sizes (due to the selection of extreme groups) and the inability to track the adoption of interpersonal regulation strategies across time. Still, with regard to small sample sizes, which most greatly affected the power of our statistical tests, the *p* values of the group comparisons at their most liberal (i.e., .05) did not achieve signifi-

cance. In actuality, we would be remiss if we did not correct for the large amount of group comparisons that we conducted using a post hoc correction (e.g., Bonferroni), but that was not necessary, as the general pattern of nonsignificant differences held.

Another limitation involved our inability to say with certainty that these interpersonal problems reported by individuals high in FF are a function of the regulation strategies adopted to deal with anticipated shame. At the current level of analysis we can only assert that there are two prototypical interpersonal problem profiles associated with high FF and that the two domains exhibit a pathoplastic relationship. It is through the hypothesized psychological mechanisms of how individuals deal with their fear of failure that interpersonal problems emerge (e.g., Conroy et al., 2009; Horowitz, 2004; Pincus, 2005a, 2005b), and we suggest that our results offer compelling initial evidence for use of aggression and appeasement to cope with anticipated shame associated with failing. Further verification is required using more continuous sampling of affect and transactional behavior in achievement situations. Finally, FF consistently predicts adoption of both performance-approach and performance-avoidance achievement goals (Conroy & Elliot, 2004; Elliot & McGregor, 2001). That is, individuals who fear failing tend to focus on outperforming others (performance-approach) and not being outperformed by others (performance-avoidance). At the present, it is not clear why some people adopt a performance-approach goal and others adopt a performance-avoidance goal (Conroy & Elliot, 2004). These contrasting goals may be a function of variations in interpersonal dominance: Aggressors focus on being triumphant, whereas Appeasers are content with not being the worst. Thus, further studies should also include measures of performance-based goals along with measures of affect and interpersonal functioning.

## REFERENCES

- Alden, L. E., Wiggins, J. S., & Pincus, A. L. (1990). Construction of circumplex scales for the Inventory of Interpersonal Problems. *Journal of Personality Assessment*, *55*, 521–536.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Ansell, E. B., & Pincus, A. L. (2004). Interpersonal perceptions of the Five-Factor Model of personality: An examination using the structural summary method for circumplex data. *Multivariate Behavioral Research*, *39*, 167–201.

- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review*, **64**, 359–372.
- Barrett, K. C., & Campos, J. J. (1987). Perspectives on emotional development II: A functionalist approach to emotions. In J. D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 555–578). Oxford, UK: John Wiley & Sons.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. Simpson & W. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Carson, R. C. (1982). Self-fulfilling prophecy, maladaptive behavior, and psychotherapy. In J. C. Anchin & D. J. Kiesler (Eds.), *Handbook of interpersonal psychotherapy* (pp. 64–77). New York: Pergamon.
- Carson, R. C. (1996). Seamlessness in personality and its derangements. *Journal of Personality Assessment*, **66**, 240–247.
- Conroy, D. E. (2001). Progress in the development of a multidimensional measure of fear of failure: The Performance Failure Appraisal Inventory (PFAI). *Anxiety, Stress, and Coping: An International Journal*, **14**, 431–452.
- Conroy, D. E., & Elliot, A. J. (2004). Fear of failure and achievement goals in sport: Addressing the issue of the chicken and the egg. *Anxiety, Stress, and Coping: An International Journal*, **17**, 271–285.
- Conroy, D. E., Elliot, A. J., & Pincus, A. L. (2009). The expression of achievement motives in interpersonal problems. *Journal of Personality*, **77**, 495–526.
- Conroy, D. E., Metzler, D. N., & Hofer, S. M. (2003). Factorial invariance and latent mean stability of performance failure appraisals. *Structural Equation Modeling*, **10**, 401–422.
- Conroy, D. E., Willow, J. P., & Metzler, J. N. (2002). Multidimensional fear of failure measurement: The Performance Failure Appraisal Inventory. *Journal of Applied Sport Psychology*, **14**, 76–90.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Darwin, C. (1872/1969). *The expression of emotions in man and animals*. London: John Murray.
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, **19**, 1–15.
- Diener, E., Emmons, R., Larsen, R. J., & Griffen, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, **49**, 71–75.
- Duley, A. R., Conroy, D. E., Morris, K., Wiley, J., & Janelle, C. M. (2005). Fear of failure biases affective and attentional responses to lexical and pictorial stimuli. *Motivation and Emotion*, **29**, 1–17.
- Elliot, A. J., & Church, M. A. (2003). A motivational analysis of defensive pessimism and self-handicapping. *Journal of Personality*, **71**, 369–396.
- Elliot, A. J., & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, **76**, 628–644.
- Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology*, **80**, 501–519.

- Elliot, A. J., & Thrash, T. M. (2004). The intergenerational transmission of fear of failure. *Personality and Social Psychology Bulletin*, *30*, 957–971.
- Exline, R. V., Ellyson, S. L., & Long, B. D. (1975). Visual behavior as an aspect of power role relationships. *Advances in the Study of Communication and Affect*, *2*, 21–52.
- Gilbert, P., & McGuire, M. T. (1998). Shame, status, and social roles: Psychobiology and evolution. In P. Gilbert & B. Andrews (Eds.), *Shame: Interpersonal behavior, psychopathology, and culture* (pp. 99–125). New York: Oxford University Press.
- Gilbert, P., Pehl, J., & Allan, S. (1994). The phenomenology of shame and guilt: An empirical investigation. *British Journal of Medical Psychology*, *67*, 23–36.
- Grosch, W. N. (1994). Narcissism: Shame, rage, and addiction. *Psychiatric Quarterly*, *65*, 49–63.
- Gurtman, M. B., & Balakrishnan, J. D. (1998). Circular measurement redux: The analysis and interpretation of interpersonal circle profiles. *Clinical Psychology: Science and Practice*, *5*, 344–360.
- Gurtman, M. B., & Pincus, A. L. (2003). The circumplex model: Methods and research applications. In J. A. Schinka & W. F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2., pp. 407–428). Hoboken, NJ: Wiley.
- Haslam, N., & Gurtman, M. B. (1999). Detecting complex profiles in interpersonal profiles. *British Journal of Medical Psychology*, *72*, 23–32.
- Hopwood, C. J., Clarke, A. N., & Perez, M. (2007). Pathoplasticity of bulimic features and interpersonal problems. *International Journal of Eating Disorders*, *40*, 652–658.
- Horowitz, L. M. (2004). *Interpersonal foundations of psychopathology*. Washington, DC: American Psychological Association.
- John, O. P., Donahue, E. M., & Kentle, R. (1991). *The Big-Five Inventory*. Technical report, Institute for Personality and Social Research. Berkeley: University of California.
- Jones, A., & Crandall, R. (1986). Validation of a short index of self-actualization. *Personality and Social Psychology Bulletin*, *12*, 63–73.
- Kachin, K. E., Newman, M. G., & Pincus, A. L. (2001). An interpersonal problem approach to the division of social phobia subtypes. *Behavior Therapy*, *32*, 479–501.
- Kasoff, M. B., & Pincus, A. L. (2002, August). *Interpersonal pathoplasticity in generalized anxiety disorder*. Paper presented at the Symposium on Interpersonal Functioning in Anxiety Disorders, American Psychological Association annual meeting, Chicago.
- Klein, M. H., Wonderlich, S., & Shea, M. T. (1993). Models of relationships between personality and depression: Toward a framework of theory and research. In M. H. Klein, D. J. Kupfer, & M. T. Shea (Eds.), *Personality and depression: A current view* (pp. 1–54). New York: Guilford Press.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Leary, T. (1957). *Interpersonal diagnosis of personality*. New York: Ronald Press.

- Levine, A. R. (2005). The social face of shame and humiliation. *Journal of the American Psychoanalytic Association*, *52*, 526–534.
- Lewis, H. B. (1971). *Shame and guilt in neurosis*. New York: International Universities Press.
- Lewis, M. (1992). *Shame: The exposed self*. New York: Free Press.
- Locke, K. D. (2000). Circumplex scales of interpersonal values: Reliability, validity, and applicability to interpersonal problems and personality disorders. *Journal of Personality Assessment*, *75*, 249–267.
- Locke, K. D., & Sadler, P. (2007). Self-efficacy, values, and complementarity in dyadic interactions: Integrating interpersonal and social-cognitive theory. *Personality and Social Psychology Bulletin*, *33*, 94–109.
- Mardia, K. V., & Jupp, P. E. (1999). *Directional statistics*. New York: Wiley.
- McCrae, R. R., & Costa, P. T. (1989). The structure of interpersonal traits: Wiggin's circumplex and the Five-Factor Model. *Journal of Personality and Social Psychology*, *56*, 586–595.
- McGregor, H. A., & Elliot, A. J. (2005). The shame of failure: Examining the link of fear of failure and shame. *Personality & Social Psychology Bulletin*, *31*, 218–231.
- Millon, T. (2000). Reflections on the future of DSM Axis II. *Journal of Personality Disorders*, *14*, 30–41.
- Moller, A. C., & Elliot, A. J. (2006). The 2 × 2 achievement goal framework: An overview of empirical research. In A. V. Mitel (Ed.), *Focus on educational psychology* (pp. 307–326). Hauppauge, NY: Nova Science Publishers.
- Pincus, A. L. (2002). Constellations of dependency within the five-factor model of personality. In P. T. Costa & T. A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (2nd ed., pp. 203–214). Washington, DC: American Psychological Association.
- Pincus, A. L. (2005a). A contemporary integrative interpersonal theory of personality disorders. In J. Clarkin & M. Lenzenweger (Eds.), *Major theories of personality disorder* (2nd ed., pp. 282–331). New York: Guilford Press.
- Pincus, A. L. (2005b). The interpersonal nexus of personality disorders. In S. Strack (Ed.), *Handbook of personology and psychopathology* (pp. 120–139). New York: Wiley.
- Pincus, A. L., Lukowitsky, M. R., & Wright, A. G. C. (in press). The interpersonal nexus of personality and psychopathology. In T. Millon, R. F. Kruger, & E. Simonsen (Eds.), *Current directions in psychopathology: Towards the DSM-V and the ICD-11*. New York: Guilford Press.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Salzer, S., Pincus, A. L., Hoyer, J., Kreisliche, R., Leichsenring, F., & Leibling, E. (2008). Interpersonal subtypes within generalized anxiety disorder. *Journal of Personality Assessment*, *90*, 292–299.
- Scheff, T. J., & Retzinger, S. M. (1991). *Emotions and violence: Shame and rage in destructive conflicts*. Lanham, MD: Lexington Books.

- Slaney, R. B., Pincus, A. L., Uliaszek, A. A., & Wang, K. T. (2006). Conceptions of perfectionism and interpersonal problems: Evaluating groups using the structural summary method for circumplex data. *Assessment*, *13*, 138–153.
- Smith, T. W., Glazer, K., Ruiz, J. M., & Gallo, L. C. (2004). Hostility, anger, aggressiveness, and coronary heart disease: An interpersonal perspective on personality, emotion, and health. *Journal of Personality*, *72*, 1217–1270.
- Spence, J. T., & Helmreich, R. L. (1978). *Masculinity and femininity: Their psychological dimensions, correlates and antecedents*. Austin: University of Texas Press.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Newton.
- Tangney, J. P. (1995). Shame and guilt in interpersonal relationships. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. 114–139). New York: Guilford Press.
- Tomkins, S. S. (1963). *Affect, imagery, consciousness 2: The negative affects*. New York: Tavistock/Routledge.
- Tracey, T. J., Rounds, J., & Gurtman, M. B. (1996). Examination of the general factor with the interpersonal circumplex structure: Application of the Inventory of Interpersonal Problems. *Multivariate Behavioral Research*, *31*, 441–466.
- Ward, J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, *58*, 236–244.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.
- Widiger, T. A., Verheul, R., & van den Brink, W. (1999). Personality and psychopathology. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 347–366). New York: Guilford Press.
- Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology*, *37*, 395–412.
- Wiggins, J. S. (2003). *Paradigms of personality assessment*. New York: Guilford.
- Wiggins, J. S., & Pincus, A. L. (1994). Personality structure and the structure of personality disorders. In P. T. Costa & T. A. Widiger (Eds.), *Personality disorders and the Five Factor model of personality* (pp. 73–93). Washington, DC: American Psychological Association.
- Winter, D. G., John, O. P., Stewart, A. J., Klohnen, E. C., & Duncan, L. E. (1998). Traits and motives: Toward an integration of two traditions in personality research. *Psychological Review*, *105*, 230–250.
- Wright, A. G. C., Pincus, A. L., Conroy, D. E., & Hilsenroth, M. (in press). Integrating methods to optimize circumplex description and comparison of groups. *Journal of Personality Assessment*.
- Yik, M. S. M., & Russell, J. A. (2004). On the relationship between circumplexes: Affect and Wiggins' IAS. *Multivariate Behavioral Research*, *39*, 203–230.