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Defense Styles and the Interpersonal Circumplex: The Interpersonal Nature of Psychological Defense

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Abstract

Defense mechanisms are unconscious processes that maintain self-esteem and prevent excessive levels of negative affect. The present study examined the interpersonal similarity of defense styles (i.e., habitual use of clusters of related defense mechanisms) as well as identifying which defense styles possessed significant interpersonal content. The interpersonal circumplex (Wiggins, Phillips, & Trapnell, 1989) served as the nomological network for evaluating the interpersonal styles associated with these defenses. The only defense style found to possess substantial interpersonal content was the immature defense style. In contrast, neither the mature nor neurotic defense styles possessed substantial interpersonal content. At the level of specific defense mechanisms, a variety of immature defenses and a single mature defense were found to possess substantial interpersonal content. These findings suggest that defense styles may be at least partially distinguishable with regard to their interpersonal content.

Key Words: Defense Mechanism, Psychological Defense, Interpersonal Style, Interpersonal Circumplex

Introduction

Defense mechanisms were introduced by Freud (1894/1962) as unconscious processes which modified or distorted reality to protect individuals from an awareness of their own unacceptable thoughts, impulses, or wishes. According to this initial conceptualization, all defense mechanisms (e.g., repression, isolation, splitting) served to regulate the individual's inner psychological state through self-deception. Despite Freud's influence in many areas of psychology (see Westen, 1998 for a review), modern psychology has not embraced Freud's notion that personality is constructed around individuals' need to avoid acknowledging their sexual and aggressive impulses. This rejection of psychoanalytic ideas – and the formerly taboo nature of unconscious processes – may explain why the potential explanatory power of defense mechanisms has been largely ignored (Cramer, 2000).

In contrast to the classic psychoanalytic understanding of defense mechanisms (which was directly tied to psychoanalytic drive theory), more recent research and theory has suggested that defense mechanisms maintain self-esteem and protect individuals from experiencing excessive levels of negative affect rather than shielding them from their unacceptable wishes or impulses (e.g., Cooper, 1998; Fenichel, 1945; Giovacchini, 1984; Kohut, 1971; Stolorow & Lachman, 1980). This reconceptualization of the function of defense mechanisms is far more consistent with current perspectives in social and personality psychology – such as Tesser's (1988) Self-Evaluation Maintenance Theory – than was Freud's original vision. Although social and personality psychologists have frequently resisted acknowledging defense mechanisms per se, many of these defenses have been addressed using different labels (Cramer, 2000; Paulhus, Fridhandler, & Hayes, 1997). For example, social psychologists have studied projection under the names of attribution or the false consensus effect. In a review of the social and personality psychology literature, Baumeister, Dale, & Sommer (1998) found considerable support for many of the defense mechanisms originally outlined by Freud. Their conclusion in favor of these defenses was particularly impressive given that the majority of the reviewed studies were not originally intended to study defense mechanisms.

As defense mechanisms continue to gain in acceptance among contemporary researchers, a central issue for future research in this area concerns whether defense mechanisms involve intrapsychic processes, interpersonal behaviors, or both (e.g., Baumeister et al., 1998; Cooper, 1998; Westerman, 1998). Although the classic psychoanalytic conception of defense mechanisms focused primarily on their intrapsychic functions, interpersonal conceptualizations of defense mechanisms have existed for decades (e.g., Horney, 1939, 1945; Kernberg, 1975; Kohut, 1984; Modell, 1975; Stolorow & Lachmann, 1980; Sullivan, 1953; Winnicott, 1965). The shift toward an interpersonal conceptualization is important because it signifies that defenses are no longer solely considered to be processes employed against particular impulses or wishes; rather, defenses are seen as developing within the context of close relationships with important others (Cooper, 1998) and may serve as a means for satisfying interpersonal goals (Paulhus & John, 1998).

The present study is concerned with examining the interpersonal similarity of defense styles and mechanisms as well as identifying which of these constructs have significant interpersonal content by comparing them within a known taxonomy. The interpersonal circumplex (e.g., LaForge, Leary, Naboisek, Coffey, & Freedman, 1954; Leary, 1957) was chosen for the present study because it is a well-established system that has previously been used to validate constructs relevant to interpersonal behavior (e.g., narcissism, rejection sensitivity, and contingent self-esteem) by determining their location in interpersonal circumplex space (e.g., Brookings, Zembar, & Hochstetler, 2003; Gurtman, 1992; Ruiz, Smith, & Rhodewalt, 2001; Wiggins et al., 1989; Zeigler-Hill, 2006). The interpersonal circumplex provides a model for understanding the two major dimensions that are believed to underlie interpersonal transactions: dominance and nurturance. Interpersonal behaviors have consequences for each individual involved in the encounter and these consequences are often described as exchanges involving the granting – or withholding – of status (through dominance-submission) and love (through nurturance-hostility). That is, the interpersonal circumplex is a means for illustrating the possible ways in which status and love can be exchanged (Foa & Foa, 1974; Wiggins, 1991).

The space within the interpersonal circumplex is defined by a two-coordinate system represented as vertical and horizontal axes. Dominance (DOM) is represented by the vertical axis and nurturance (LOV) is represented by the horizontal axis. Because the DOM and LOV coordinates identify a single point in circumplex space, it is possible to characterize that location in terms of its distance from the origin and its angular displacement relative to the horizontal axis (Wiggins et al., 1989). The projection of a scale in the two-dimensional circumplex space provides information concerning the degree (i.e., vector length) and quality (i.e., angular displacement) of the scale's interpersonal content (Gurtman, 1991, 1999).

Overview and Predictions

To explore the interpersonal content and similarity of defense styles, the present study examines whether defenses are associated with self-reported interpersonal style. Similar to the contention that defensive processes play a role in the development of personality structures (Costa, Zonderman, & McCrae, 1991; Cramer, 1991; Haan, 1977; Paulhus, Fridhandler, & Hayes, 1997), it was predicted that the habitual employment of particular defense mechanisms will be related to the adoption of particular interpersonal styles. Vaillant (1992) identified the maturity of defenses as a predictor of the ability to form and maintain stable interpersonal relationships in three longitudinal studies spanning the adult years. The present study focused primarily upon the immature defense style because Vaillant (1977) proposed that immature defenses function specifically as adaptations to distress that arise in interpersonal contexts. Consistent with Vaillant's (1977) hypothesis, previous research has found the immature defense style to have the most reliable associations with interpersonal outcomes. For example, Bullitt & Farber (2002a, 2002b) found that individuals are more likely to employ immature defenses in their romantic relationships than they are at work and that women are especially likely to employ immature defenses when dealing with issues of control in their romantic relationships. These results are consistent with other findings that demonstrate a relationship between immature defenses and poor marital adjustment (Bouchard & Theriault, 2003; Ungerer, Waters, Barnett, & Dolby, 1997). Additionally, immature defenses are associated with difficulties at the individual level that may have an impact upon interpersonal behavior such as depression (McMahon, Barnett, Kowalenko, & Tennant, 2005) and life stress (Flannery & Perry,

1990). Based on previous research and theory, it is expected that the immature defense style will contain significant interpersonal content. Given that previous research has failed to find reliable associations between interpersonal outcomes and either the mature or neurotic defense style, no specific predictions were made for these defenses.

Method

Participants and Procedure

Participants were 617 undergraduates enrolled in psychology courses who participated in return for partial fulfillment of a research participation requirement. Participants completed measures of psychological defense and interpersonal style in groups ranging in size from 3 to 25 participants. Of the 617 participants who began the study, 16 participants failed to follow directions and, as a result, their data were discarded. The analyses were conducted using the 601 remaining participants (173 men and 428 women). The mean age of these participants was 19.28 years (*SD* = 2.94).

Measures

Psychological Defense. Defense styles and mechanisms were assessed using the Defense Style Questionnaire-40 (DSQ-40; Andrews, Singh, & Bond, 1993). The DSQ-40 is a self-report measure of characteristic defense styles (i.e., clusters of developmentally similar defense mechanisms). This measure consists of 40-items to which participants provide ratings of agreement on scales ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). The instrument measures the conscious behavioral derivatives of 20 defense mechanisms with two items for each defense. These specific defense mechanisms are organized into three broad defense styles: mature, neurotic, and immature. The mature defense style is comprised of the following defense mechanisms: humor, suppression, sublimation, and anticipation. Reaction formation, idealization, pseudo-altruism, and undoing constitute the neurotic defense style. The immature defense style consists of rationalization, autistic fantasy, displacement, isolation, dissociation, devaluation, splitting, denial, passive aggression, somatization, acting out, and projection. The internal consistency coefficient for the immature defense style was adequate (α = .80); whereas, the coefficients for the mature and neurotic defense styles were less robust (.59 and .54, respectively). The relatively low internal consistency coefficients for the intermediate and mature defense styles is most likely influenced by the fact that they contain fewer items (i.e., 8 items each) than the immature defense style which contains 24 items. Because each defense mechanism is measured using only two items, the internal consistencies of these subscales were highly variable, from α = .19 for denial to α = .72 for autistic fantasy. The average internal consistency for the defense mechanisms was α = .37. Despite the low internal consistencies of these defense mechanism scores, these measures were included in the present study for exploratory purposes. Information concerning the reliability and validity of the DSQ-40 has been previously reported (e.g., Andrews et al., 1993; Bond, 1995).

Interpersonal Style. Interpersonal style was measured with the Interpersonal Adjective Scales (IAS-R; Wiggins, 1995). The IAS-R consists of 64 adjectives to which participants provide ratings of accuracy on scales ranging from 1 *(extremely inaccurate*) to 8 (*extremely accurate*). Ratings of the adjectives provide individual scores on eight personality scales (or octants) which identify particular interpersonal tendencies representing a unique blend of dominance and nurturance. The octants are alphabetically labeled in a counterclockwise direction around the circumplex at 45° intervals originating at the positive horizontal axis: Assured-Dominant (PA; 90°), Arrogant-Calculating (BC; 135°), Cold-hearted (DE; 180°), Aloof-Introverted (FG; 225°), Unassured-Submissive (HI; 270°), Unassuming-Ingenuous (JK; 315°), Warm-Agreeable (LM; 0°), and Gregarious-Extraverted (NO; 45°). The scores for dominance (DOM) and nurturance (LOV) are weighted linear composites derived from the octant scores. Previous research has demonstrated the reliability and validity of the IAS-R as well as establishing its association with other measures (e.g., Ansell & Pincus, 2004; Tracey, Ryan, & Jaschik-Herman, 2001; Wiggins, 1995).

Results

Data Analysis

Although a variety of methods exist for examining the location of constructs within the space defined by the interpersonal circumplex (e.g., Gurtman, 1992, 1997; Trapnell & Wiggins, 1990), the method employed by the present study was based upon the procedure outlined by Wiggins and Broughton (1991). The location of each defense in circumplex space is determined by finding its relationship with each of the two principal dimensions of the circumplex (i.e., DOM and LOV). This is accomplished by determining each construct's DOM and LOV coordinates as follows:

$$DOM = (.25) * \Sigma[r_i * \sin(\Theta_i)]$$

$$LOV = (.25) * \Sigma [r_i * \cos(\Theta_i)]$$

The location of each defense within the interpersonal circumplex is described using its angular location and its vector length. The angular location of each defense style and mechanism is its angle of displacement from the positive horizontal axis. Angular location is calculated as:

$$\text{Angular Location} = \arctan (DOM/LOV).$$

The vector length for each defense is its distance from the origin. The vector length characterizes the strength of the interpersonal nature of the construct such that a construct with strong interpersonal characteristics will have a large vector length placing it nearer the circumference of the circumplex. Vector length is calculated as:

$$\text{Vector Length} = (DOM^2 + LOV^2)^{1/2}.$$

The common heuristic used to determine whether a construct has substantial interpersonal content is a vector length which exceeds .30 (Gurtman, 1991).

Table 1
Descriptive Statistics

Variable	*M*	*SD*	Minimum	Maximum	α
DSQ Styles and Mechanisms					
Mature Style	5.35	1.13	2.00	8.88	.59
Humor	6.45	1.62	1.50	9.00	.58
Suppression	5.17	1.80	1.00	9.00	.24
Sublimation	4.65	1.78	1.00	9.00	.23
Anticipation	5.15	1.70	1.00	9.00	.36
Neurotic Style	5.08	1.17	1.00	8.38	.54
Reaction Formation	5.37	1.97	1.00	9.00	.27
Idealization	5.07	2.07	1.00	9.00	.40
Pseudo-Altruism	5.82	1.60	1.00	9.00	.26
Undoing	4.04	1.77	1.00	9.00	.34
Immature Style	3.85	.95	1.63	7.21	.80
Rationalization	5.63	1.58	1.00	9.00	.34
Autistic Fantasy	3.69	2.09	1.00	9.00	.72
Displacement	3.60	1.84	1.00	9.00	.26
Isolation	4.18	2.11	1.00	9.00	.55
Dissociation	3.57	1.62	1.00	9.00	.20
Devaluation	3.25	1.48	1.00	8.50	.27
Splitting	4.05	1.78	1.00	9.00	.24
Denial	3.43	1.65	1.00	9.00	.19
Passive Aggression	3.42	1.67	1.00	9.00	.36
Somatization	3.91	2.00	1.00	9.00	.51
Acting Out	4.04	1.97	1.00	9.00	.58
Projection	3.44	1.68	1.00	9.00	.57
IAS-R Octants and Dimensions					
Assured-Dominant (PA)	49.93	10.96	15.00	80.00	.80
Arrogant-Calculating (BC)	43.77	12.57	23.00	83.00	.87
Cold-hearted (DE)	46.07	11.76	33.00	90.00	.88
Aloof-Introverted (FG)	43.50	11.78	28.00	83.00	.88
Unassured-Submissive (HI)	44.81	11.48	23.00	80.00	.84
Unassuming-Ingenuous (JK)	52.17	13.57	13.00	84.00	.78
Warm-Agreeable (LM)	53.15	12.72	10.00	75.00	.89
Gregarious-Extraverted (NO)	55.57	11.94	14.00	76.00	.87
Dominance (DOM)	.23	1.07	-3.42	3.18	.84
Nurturance (LOV)	.65	1.34	-4.17	3.33	.86

Note: IAS-R dimension scores (i.e., DOM and LOV) are weighted linear composites derived from the octant scores. The reliabilities for these dimension scores were estimated from the internal consistency coefficients for the constituent octant scores (Nunnally & Bernstein, 1994).

Descriptive Statistics

Means, standard deviations, minimum values, maximum values, and internal consistency coefficients for the DSQ defense styles, DSQ defense mechanisms, IAS-R octants, and IAS-R dimensions are displayed in Table 1. Table 2 presents the bivariate correlations of the DSQ defense styles and mechanisms with the IAS-R octants and dimensions.

Projection onto the Interpersonal Circumplex

The results for the projection of the domains of defense mechanisms and defense styles into interpersonal circumplex space are shown in Figure 1. The angular displacement, octant location, and vector length for each defense style and mechanism is presented in Table 3. The mature defense mechanisms varied greatly in their association with interpersonal style ranging from warm-agreeable to arrogant-calculating. It is important to note that the only mature defense mechanism to possess substantial interpersonal content (i.e., a vector length exceeding .30) was humor. The neurotic defenses were located in the area of the circumplex ranging from unassured-submissive to warm-agreeable; however, none of the neurotic defenses possessed significant interpersonal content. The immature defense style along with five of the immature defense mechanisms (i.e., autistic fantasy, isolation, devaluation, passive aggression, and projection) possessed substantial interpersonal content. The immature defenses were located primarily in the cold-hearted and aloof-introverted octants of the circumplex. Of the four immature defenses that were not located in these octants, three were located in adjacent octants (i.e., dissociation and splitting were located in the arrogant-calculating octant, whereas somatization was located in the unassured-submissive octant). In contrast to the relatively tight clustering of the other immature defenses, rationalization was located in the gregarious-extraverted octant and separated from the nearest immature defense mechanism by more than 90°.

Table 2
Correlations of Defense Mechanisms and Defense Styles with the Interpersonal Adjective Scale Octants and Dimensions

	PA	BC	DE	FG	HI	JK	LM	NO	DOM	LOV
Mature Style	.20***	.06	.03	-.03	-.07	.08	.10*	.12**	.11**	.06
Humor	.25***	.04	-.04	-.23***	-.23***	-.02	.11**	.29***	.29***	.13**
Suppression	.15***	.13**	.10*	.07	-.03	-.04	-.03	-.04	.07	-.09*
Sublimation	.07	-.03	-.02	-.02	.01	.14***	.13***	.11**	.00	.10*
Anticipation	.05	.01	.02	.09*	.04	.11**	.05	-.02	-.05	.01
Neurotic Style	-.06	-.09*	-.12**	-.07	.12**	.20***	.32***	.21***	-.07	.23***
Reaction Formation	-.17***	-.10*	-.12**	.00	.14***	.16***	.26***	.06	-.15***	.17***
Idealization	.07	-.09*	-.11**	-.18***	-.03	.11**	.26***	.26***	.08*	.23***
Pseudo-Altruism	.04	-.10*	-.18***	-.19***	-.04	.12**	.28***	.29***	.08*	.26***
Undoing	-.09*	.07	.11**	.20***	.25***	.12**	.00	-.07	-.19***	-.07
Immature Style	.03	.33***	.41***	.41***	.28***	-.09*	-.25***	-.27***	-.13***	-.39***
Rationalization	.25***	-.03	-.04	-.14***	-.12**	.09*	.16***	.23***	.17***	.15***
Autistic Fantasy	-.22***	.16***	.23***	.39***	.39***	-.01	-.13***	-.31***	-.31***	-.26***
Displacement	-.08	.14***	.14***	.25***	.21***	-.05	-.10*	-.14***	-.13***	-.18***
Isolation	-.03	.17***	.28***	.35***	.19***	-.01	-.25***	-.27***	-.17***	-.30***
Dissociation	.29***	.30***	.28***	.11**	-.07	-.11**	-.15***	-.01	.19***	-.22***
Devaluation	-.01	.27***	.35***	.38***	.26***	-.05	-.24***	-.30***	-.17***	-.35***
Splitting	.15***	.25***	.23***	.09*	.06	-.11**	-.10*	-.02	.09*	-.18***
Denial	.14***	.23***	.27***	.17***	.04	-.09*	-.12**	-.05	.06	-.21***
Passive Aggression	-.04	.25***	.33***	.33***	.28***	-.08	-.22***	-.27***	-.16***	-.33***
Somatization	-.12**	.02	.07	.18***	.20***	.04	.00	-.10*	-.17***	-.07
Acting Out	.14***	.24***	.26***	.16***	.01	-.16***	-.24***	-.11**	.08	-.27***
Projection	-.17***	.14***	.23***	.31***	.30***	-.02	-.15***	-.27***	-.24***	-.25***

Note: PA = Assured-Dominant; BC = Arrogant-Calculating; DE = Cold-hearted; FG = Aloof-Introverted; HI = Unassured-Submissive; JK = Unassuming-Ingenuous; LM = Warm-Agreeable; NO = Gregarious-Extraverted; DOM = Dominance; LOV = Nurturance.
* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3
Interpersonal Circumplex Statistics for Defense Mechanisms and Defense Styles

Variable	Angular Displacement	Octant Location	Vector Length
Mature Style	63.43°	NO	.13
Humor	65.80°	NO	.31
Suppression	141.50°	BC	.11
Sublimation	1.10°	LM	.10
Anticipation	284.04°	HI	.05
Neurotic Style	343.80°	LM	.24
Reaction Formation	318.96°	JK	.23
Idealization	20.25°	LM	.24
Pseudo-Altruism	17.37°	LM	.27
Undoing	249.92°	HI	.20
Immature Style	199.01°	DE	.41
Rationalization	48.26°	NO	.22
Autistic Fantasy	229.76°	FG	.41
Displacement	217.13°	FG	.22
Isolation	210.08°	FG	.34
Dissociation	139.76°	BC	.29
Devaluation	205.45°	FG	.39
Splitting	154.06°	BC	.21
Denial	163.66°	DE	.22
Passive Aggression	205.58°	FG	.36
Somatization	249.30°	HI	.18
Acting Out	163.80°	DE	.28
Projection	224.88°	FG	.35

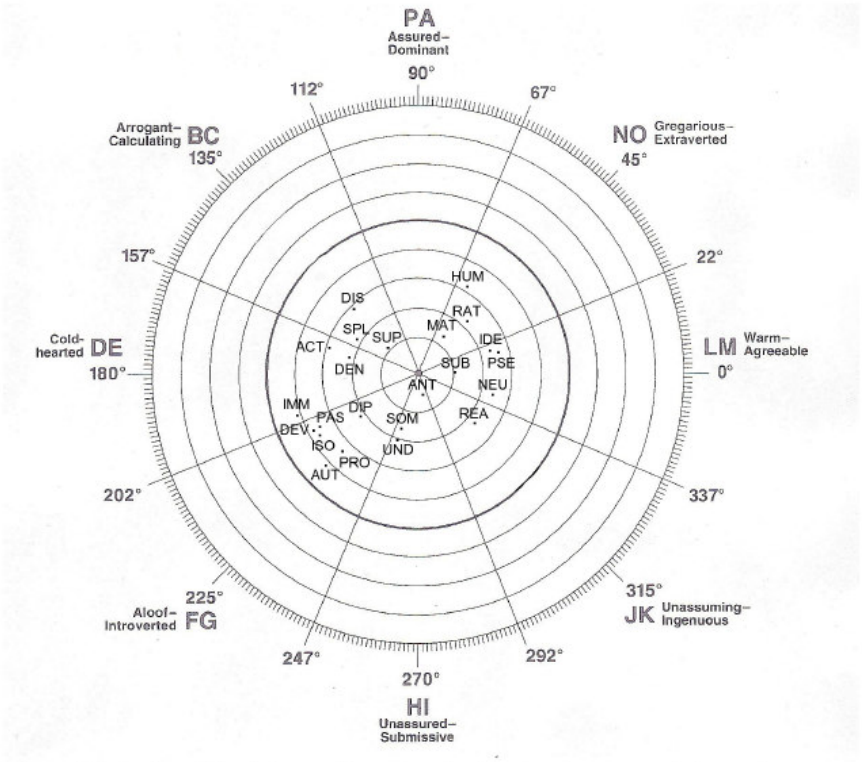

Figure 1. Projection of the defense styles and mechanisms into interpersonal circumplex space. MAT = Mature defense style; HUM = Humor; SUP = Suppression; SUB = Sublimation; ANT = Anticipation; NEU = Neurotic defense style; REA = Reaction formation; IDE = Idealization; PSE = Pseudo-altruism; UND = Undoing; IMM = Immature defense style; RAT = Rationalization; AUT = Autistic fantasy; DIP = Displacement; ISO = Isolation; DIS = Dissociation; DEV = Devaluation; SPL = Splitting; DEN = Denial; PAS = Passive aggression; SOM = Somatization; ACT = Acting out; PRO = Projection.

Measuring Interpersonal Similarity

The interpersonal similarity among the defense styles and mechanisms was estimated by using the proximity of their angular displacements. Cosine-difference correlations served as the measure of interpersonal similarity. Cosine-difference correlations are equal to the cosine of the angle of separation between the defense styles (Gurtman, 1992, 1999). For example, if two defense styles had the same angular displacement, their cosine-difference correlation would be equal to 1 (i.e., *cos*[0] = 1). For two defense styles separated by 90°, the cosine-difference correlation would be 0. For two defense styles separated by 180°, the cosine-difference correlation would be -1, and so forth. As explained by Gurtman (1992), a cosine-difference correlation is equivalent to a reproduced correlation in factor analysis for constructs measured in two dimensions. The cosine-difference correlations for the defense styles and mechanisms are presented in Table 4. The average cosine-difference correlation among the mature and neurotic defense mechanisms were -.24 and .18, respectively. These correlations suggest that there is little interpersonal cohesion among these defense mechanisms. In contrast, the average cosine-difference correlation among the immature defense mechanisms was .44 which suggests these defenses are reported by individuals with similar interpersonal styles. This average correlation increases to .73 if the immature defense mechanism of rationalization – which is located more than 90° away from the nearest immature defense mechanism – is excluded. It is also important to note that the location of the immature defense style in circumplex space was separated from the mature and neurotic defense styles by more than 135°. This suggests that the interpersonal style of individuals with immature defense styles is very different from the behavior of individuals who employ either mature or neurotic defenses.

Psychological Defense and Interpersonal Style

The goal of the present analyses was to examine the unique associations of particular defense styles with interpersonal style. This was accomplished by conducting a series of multiple regression analyses in which each of the IAS-R octant and dimension scores were regressed separately onto the defense styles. The results of these analyses are presented in Table 5. The results showed that the mature defense style was associated with dominance ($\beta = .16$, $p < .001$), whereas the neurotic defense style was associated with nurturance ($\beta = .38$, $p < .001$). In addition, the immature defense style was associated with submissiveness ($\beta = -.15$, $p < .001$) and hostility ($\beta = -.53$, $p < .001$).

Table 4
Cosine-Difference Correlations for Defense Mechanisms and Defense Styles

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. *Mature Style*	--																						
2. Humor	.99	--																					
3. Suppression	.21	.25	--																				
4. Sublimation	.46	.43	-.77	--																			
5. Anticipation	-.76	-.79	-.79	.22	--																		
6. *Neurotic Style*	.18	.14	-.93	.95	.50	--																	
7. Reaction Formation	-.25	-.29	-.99	.74	.82	.91	--																
8. Idealization	.73	.70	-.52	.94	-.11	.80	.48	--															
9. Pseudo-Altruism	.69	.66	-.56	.96	-.06	.83	.52	.99	--														
10. Undoing	-.99	-.99	-.32	-.36	.83	-.07	.36	-.65	-.61	--													
11. *Immature Style*	-.71	-.68	.54	-.95	.09	-.82	-.50	-.99	-.99	.63	--												
12. Rationalization	.97	.95	-.06	.68	-.56	.43	.01	.88	.86	-.93	-.87	--											
13. Autistic Fantasy	-.97	-.96	.03	-.66	.58	-.41	.01	-.87	-.84	.94	.86	-.99	--										
14. Displacement	-.90	-.88	.25	-.81	.39	-.60	-.21	-.96	-.94	.84	.95	-.98	.98	--									
15. Isolation	-.84	-.81	.37	-.87	.28	-.69	-.32	-.99	-.98	.77	.98	-.95	.94	.99	--								
16. Dissociation	.24	.28	.99	-.75	-.81	-.91	-.99	-.49	-.54	-.34	.51	-.03	.00	.22	.34	--							
17. Devaluation	-.79	-.76	.44	-.91	.20	-.75	-.40	-.99	-.99	.71	.99	-.92	.91	.98	.99	.41	--						
18. Splitting	-.01	.03	.98	-.89	-.64	-.99	-.97	-.69	-.73	-.10	.71	-.27	.25	.45	.56	.97	.62	--					
19. Denial	-.18	-.14	.93	-.95	-.51	-.99	-.91	-.80	-.83	.07	.82	-.43	.41	.60	.69	.91	.75	.99	--				
20. Passive Aggression	-.79	-.76	.44	-.91	.20	-.75	-.40	-.99	-.99	.72	.99	-.92	.91	.98	.99	.41	.99	.62	.74	--			
21. Somatization	-.99	-.99	-.31	-.37	.82	-.08	.35	-.66	-.62	.99	.64	-.93	.94	.85	.77	-.33	.72	-.09	.08	.72	--		
22. Acting Out	-.18	-.14	.93	-.95	-.50	-.99	-.91	-.80	-.83	.07	.82	-.43	.41	.60	.69	.91	.75	.99	.99	.75	.08	--	
23. Projection	-.95	-.93	.12	-.72	.51	-.48	-.07	-.91	-.89	.91	.90	-.99	.99	.99	.97	.09	.94	.33	.48	.94	.91	.48	--

Table 5
Multiple Regression Analyses for the Defense Styles

Variables	PA[a]	BC[b]	DE[c]	FG[d]	HI[e]	JK[f]	LM[g]	NO[h]	DOM[i]	LOV[j]
Mature	.23*	.03	-.02	-.09	-.16*	.05	.08	.13*	.16*	.07
Neurotic	-.13*	-.22*	-.27*	-.20*	.07	.24*	.42*	.30*	-.06	.38*
Immature	.02	.39*	.50*	.49*	.29*	-.18*	-.40*	-.39*	-.15*	-.53*

Note: [a]Multiple $R = .23$; $R^2 = .05$; $F(3, 597) = 11.15$, $p < .001$. [b]Multiple $R = .39$; $R^2 = .15$; $F(3, 597) = 34.53$, $p < .001$. [c]Multiple $R = .49$; $R^2 = .24$; $F(3, 597) = 61.33$, $p < .001$. [d]Multiple $R = .47$; $R^2 = .22$; $F(3, 597) = 55.13$, $p < .001$. [e]Multiple $R = .32$; $R^2 = .10$; $F(3, 597) = 22.44$, $p < .001$. [f]Multiple $R = .27$; $R^2 = .07$; $F(3, 597) = 14.98$, $p < .001$. [g]Multiple $R = .49$; $R^2 = .24$; $F(3, 597) = 62.04$, $p < .001$. [h]Multiple $R = .43$; $R^2 = .19$; $F(3, 597) = 45.59$, $p < .001$. [i]Multiple $R = .21$; $R^2 = .04$; $F(3, 597) = 8.93$ $p < .001$. [j]Multiple $R = .55$; $R^2 = .30$; $F(3, 597) = 84.26$, $p < .001$.
PA = Assured-Dominant; BC = Arrogant-Calculating; DE = Cold-hearted; FG = Aloof-Introverted; HI = Unassured-Submissive; JK = Unassuming-Ingenuous; LM = Warm-Agreeable; NO = Gregarious-Extraverted; DOM = Dominance; LOV = Nurturance.
* $p < .005$ (Bonferroni corrected).

Gender Differences in Psychological Defense and Interpersonal Style

Previous research has reported gender differences in interpersonal style (e.g., Luxen, 2005). Therefore, exploratory analyses were conducted to examine whether gender differences emerged in the present data and whether these differences would influence the present results. This was accomplished through the use of a series of univariate (Bonferroni corrected) ANOVAs. These analyses revealed several gender differences for psychological defense and interpersonal style. For the mature defense mechanisms, females reported greater use of suppression than males ($M_{women} = 4.99$, $M_{Men} = 5.60$; $F[1, 599] = 14.41$, $p < .001$). The only gender difference for the neurotic defense mechanisms was that females reported greater use of pseudo-altruism than males ($M_{women} = 5.96$, $M_{Men} = 5.48$; $F[1, 599] = 11.23$, $p < .001$). Gender differences emerged for 6 of the immature defense mechanisms. In comparison with females, males reported greater use of 5 immature defense mechanisms: isolation ($M_{women} = 3.99$, $M_{Men} = 4.66$; $F[1, 599] = 12.82$, $p < .001$), dissociation ($M_{women} = 3.28$, $M_{Men} = 4.26$; $F[1, 599] = 48.76$, $p < .001$), devaluation ($M_{women} = 3.13$, $M_{Men} = 3.55$; $F[1, 599] = 10.36$, $p < .001$), denial ($M_{women} = 3.17$, $M_{Men} = 4.05$; $F[1, 599] = 36.92$, $p < .001$), and passive aggression ($M_{women} = 3.28$, $M_{Men} = 3.76$; $F[1, 599] = 10.29$, $p < .001$). The only immature defense mechanism that women relied upon more heavily than men was somatization ($M_{women} = 4.12$, $M_{Men} = 3.37$; $F[1, 599] = 17.88$, $p < .001$).

For interpersonal style, males reported higher levels of dominance than females ($M_{women} = .13$, $M_{Men} = .48$; $F[1, 599] = 13.11$, $p < .001$) and also had higher scores on the following octants: assured-dominant ($M_{women} = 48.62$, $M_{Men} = 53.15$; $F[1, 599] = 21.74$, $p < .001$), arrogant-calculating ($M_{women} = 40.52$, $M_{Men} = 51.80$; $F[1, 599] = 118.49$, $p < .001$), cold-hearted ($M_{women} = 43.28$, $M_{Men} = 52.99$; $F[1, 599] = 97.57$, $p < .001$), and aloof-introverted ($M_{women} = 42.15$, $M_{Men} = 46.83$; $F[1, 599] = 20.12$, $p < .001$). In contrast, females reported higher levels of nurturance than males ($M_{women} = .97$, $M_{Men} = -.15$; $F[1, 599] = 100.62$, $p < .001$) and also reported higher scores on the following octants: unassuming-ingenuous ($M_{women} = 54.29$, $M_{Men} = 46.94$; $F[1, 599] = 38.45$, $p < .001$), warm-agreeable ($M_{women} = 55.43$, $M_{Men} = 47.50$; $F[1, 599] = 51.95$, $p < .001$), and gregarious-extraverted ($M_{women} = 56.93$, $M_{Men} = 52.21$; $F[1, 599] = 19.90$, $p < .001$). The only octant for which no gender difference emerged was unassured-submissive ($M_{women} = 44.96$, $M_{Men} = 44.46$; $F[1, 599] = .24$, *ns*).

The present analyses examined whether the gender differences that emerged for the measures of psychological defense and interpersonal style had an impact upon the location of those defense styles and mechanisms within circumplex space. The angular location and vector length for each defense was calculated separately for men and women (see Table 6). For the majority of the defense styles and mechanisms, gender did not have an impact on its location within the circumplex. That is, for most of the defenses the difference in angular location between men and women was negligible (i.e., angular discrepancies less than 35° which resulted in cosine-difference correlations greater than .82). However, there were two exceptions to this overall pattern. First, the interpersonal style associated with suppression

Table 6
Gender Differences in Interpersonal Circumplex Statistics for Defense Styles and Mechanisms

	Women			Men				
Variable	Location	Octant	VL	Location	Octant	VL	Angular Δ	Cosine
Mature Style	39.87°	NO	.11	67.40°	PA	.20	27.53°	.89
Humor	63.04°	NO	.32	72.18°	PA	.32	9.14°	.99
Suppression	191.11°	DE	.06	84.29°	PA	.19	106.82°	-.29
Sublimation	10.01°	LM	.12	336.27°	JK	.13	33.74°	.83
Anticipation	284.18°	HI	.09	122.74°	BC	.05	161.44°	-.95
Neurotic Style	348.69°	LM	.22	339.71°	LM	.22	8.98°	.99
Reaction Formation	316.57°	JK	.18	320.74°	JK	.28	4.17°	1.00
Idealization	31.21°	NO	.24	10.56°	LM	.22	20.65°	.94
Pseudo-Altruism	25.12°	NO	.27	22.29°	NO	.22	2.83°	1.00
Undoing	260.43°	HI	.22	232.55°	FG	.18	28.33°	.88
Immature Style	206.43°	FG	.38	195.81°	DE	.46	10.62°	.98
Rationalization	55.29°	NO	.27	24.87°	NO	.17	30.42°	.86
Autistic Fantasy	238.51°	FG	.41	221.04°	FG	.43	17.47°	.95
Displacement	201.12°	DE	.25	213.94°	FG	.32	12.87°	.97
Isolation	225.77°	FG	.32	199.80°	DE	.38	25.97°	.90
Dissociation	131.53°	BC	.19	127.90°	BC	.23	3.63°	1.00
Devaluation	216.57°	FG	.34	201.61°	FG	.46	14.96°	.97
Splitting	162.59°	DE	.23	128.35°	BC	.15	34.24°	.83
Denial	176.76°	DE	.11	158.09°	DE	.19	18.67°	.95
Passive Aggression	218.56°	FG	.35	194.90°	DE	.38	23.66°	.92
Somatization	229.29°	FG	.17	223.52°	FG	.30	5.77°	.99
Acting Out	163.99°	DE	.25	169.05°	DE	.28	5.06°	1.00
Projection	227.38°	FG	.32	223.07°	FG	.42	4.31°	1.00

Note: Angular Δ = Difference in angular location between women and men. Cosine = Cosine-difference correlation of angular locations for women and men. $N_{Women} = 428$ and $N_{Men} = 173$.

was quite different for men and women as demonstrated by their 106° separation. Among men, suppression was associated with an assured-dominant interpersonal style. In contrast, suppression was associated with a cold-hearted style among women. Second, men and women who reported the use of anticipation differed greatly in their interpersonal styles (i.e., the difference in their angular locations was 161°). Men who relied upon anticipation reported arrogant-calculating interpersonal styles; whereas, women reported unassured-submissive interpersonal behaviors.

Discussion

The results of the present study provide insight into the interpersonal nature of psychological defense. Although each of the defense styles and mechanisms were associated with one or more IAS-R octant scores, only seven of these measures exceeded Gurtman's (1991) criterion for determining that a construct has substantial interpersonal content (i.e., a vector length that exceeds .30). Of these seven measures, six were defense mechanisms and one was a defense style. The only defense style to have substantial interpersonal content was the immature defense style. Five of the six defense mechanisms that possessed substantial interpersonal content were immature (i.e., autistic fantasy, isolation, devaluation, passive aggression, and projection) and one was mature (i.e., humor). However, a number of additional defenses approached the criterion for substantial interpersonal content (i.e., vector lengths greater than .20). These defenses included the neurotic defense style, each of the neurotic defense mechanisms (i.e., reaction formation, idealization, pseudo-altruism, and undoing), and six of the immature

defense mechanisms (i.e., rationalization, displacement, dissociation, splitting, denial, and acting out). To summarize, all of the neurotic defenses and immature defenses (with the exception of somatization) possessed either marginal or substantial interpersonal content. In contrast, the only mature defense with interpersonal content was humor.

The defense styles and mechanisms were associated with a variety of interpersonal styles. The immature defense style and most of the immature defense mechanisms were associated with either the cold-hearted or aloof-introverted interpersonal styles. These interpersonal styles are characterized by the denial of love for the self and the denial of both love and status for others (Wiggins, 1995). The present results are consistent with Vaillant's (1977) proposal that immature defenses are closely tied to interpersonal contexts. It is interesting that the immature defenses were so different from the other defenses in terms of their location on the interpersonal circumplex. In fact, the immature defense style was separated from the neurotic and mature defense styles by more than 135°. The unique interpersonal style associated with immature defenses was due in large part to its projection on the LOV dimension with immature defenses being negative (i.e., hostile) whereas the others were at least somewhat positive (i.e., nurturing). The interpersonal style associated with immature defenses suggests that this defense style is associated with a set of interpersonal behaviors that are radically different from those associated with the other defense styles.

The only mature defense to possess substantial interpersonal content was humor. This defense was associated with a gregarious-extraverted interpersonal style which involves granting love and status to both the self and others (Wiggins, 1995). The lack of interpersonal content for the mature defense style may have been due in part to the poor interpersonal cohesion among the mature defense mechanisms or the relatively low internal consistency of the mature defense style.

The neurotic defense style (as well as the neurotic defenses of idealization and pseudo-altruism) was marginally associated with a warm-agreeable interpersonal style. This interpersonal style is characterized by the granting of love but not status to oneself and both love and status to others (Wiggins, 1995). In comparison, the remaining neurotic defense mechanisms (i.e., reaction formation and undoing) were associated with unassuming-ingenuous and unassured-submissive interpersonal styles, respectively. Both of these interpersonal styles involve denying the self both love and status.

Gender differences emerged for dominance and nurturance as well as 8 of the defense mechanisms. Further, gender was associated with the location of the mature defense style and a variety of defense mechanisms on the interpersonal circumplex. In general, these gender differences revealed that the employment of defenses was more likely to be associated with dominance for men than it was for women. This suggests that the interpersonal consequences of the same defense styles or mechanisms may differ for men and women. For example, the use of mature defenses is associated with dominance among men but with a combination of dominance and nurturance among women.

Due to the correlational nature of the present data, the direction of causality between the defense styles and interpersonal styles cannot be determined. Although the assumption underlying the present study was that an individual's characteristic style of defense would influence the interpersonal style of the individual, this cannot be established using the data from the present study. Rather, alternative explanations for the present findings clearly exist. One alternative possibility is that individuals may employ certain defense styles as a result of their interpersonal styles. For example, an individual with a nurturing interpersonal style may be unlikely to use an immature defense – such as acting out – to protect one's self-esteem following a threat because of the potential consequences for other individuals. Another possibility is that both defense style and interpersonal style may result from the influence of some other variable. For example, inconsistent or negative childhood interactions with caregivers may cause individuals to maintain their use of immature defense mechanisms well into adulthood as well as leading them to adopt interpersonal styles characterized by hostility.

One limitation of the present study was its reliance on self-report measures of both defense style and interpersonal style. This may seem especially problematic for defense styles given that defense

mechanisms are thought to operate outside of conscious awareness which would seemingly preclude the possibility of useful self-reports (e.g., Davidson & MacGregor, 1998). However, the characteristic use of specific defenses is believed to result in conscious derivatives that can be identified by the individual (Andrews et al., 1993). For example, individuals who rely upon somatization may be able to recognize that they have a tendency to develop physical symptoms (e.g., headaches) when confronted with undesirable tasks (e.g., filing one's taxes) even though they may be unaware of the function these physical symptoms serve and their role in producing the symptoms. In addition, individuals are also likely to become aware of their characteristic defense style when these defenses are ineffective or other individuals point out their defensive behavior (Bond, Gardner, Christian, & Sigal, 1983). Thus, it does appear that self-report is at least somewhat effective as a means for assessing defense style (see Bond, 2004 for a review). Future research should continue to examine the interpersonal correlates of psychological defense – especially immature defenses – using methods other than self-report such as autobiographical reports (e.g., Vaillant, Bond, & Vaillant, 1986), projective tests (e.g., Cramer, 1991), or behavioral measures (Barrett, Williams, & Fong, 2002).

Another limitation of the present study was the poor internal consistency of the DSQ-40. The immature defense style was the only defense style with an acceptable level of internal consistency ($\alpha = .80$). The mature and neurotic defense styles were less robust with relatively low internal consistency coefficients (.59 and .54, respectively). The relatively low internal consistency coefficients for the intermediate and mature defense styles is most likely influenced by the fact that they contain fewer items (i.e., 8 items each) than the immature defense style which contains 24 items. In addition, the internal consistencies for the defense mechanism subscales tended to be low (i.e., the average internal consistency was .37). The relatively low internal consistency for the DSQ-40 may have influenced the present results. That is, the immature defense style was the only defense style with substantial interpersonal content and it was also the only defense style with an adequate level of internal consistency.

In summary, the findings of the present study provide initial evidence that the immature defense style contains significant interpersonal content, whereas neurotic and mature defenses, in general, do not. Further, the interpersonal style associated with immature defenses was characterized by a combination of hostility and submissiveness. The results of the present study suggest that defense mechanisms are at least partially distinguishable with regard to their interpersonal content.

References

Andrews, G., Singh, M., & Bond, M. (1993). The Defense Style Questionnaire. *Journal of Nervous and Mental Disease*, *181*, 246-256.

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.

Barrett, L. F., Williams, N. L., & Fong, G. T. (2002). Defensive verbal behavior assessment. *Personality and Social Psychology Bulletin*, *28*, 776-788.

Baumeister, R. F., Dale, K., & Sommer, K. L. (1998). Freudian defense mechanisms and empirical findings in modern social psychology: Reaction formation, projection, displacement, undoing, isolation, sublimation, and denial. *Journal of Personality*, *66*, 1081-1124.

Bond, M. P. (1995). The development and properties of the Defense Style Questionnaire. In H. R. Conte & R. Plutchik (Eds.), *Ego defenses: Theory and measurement* (pp. 202-220). New York: Wiley.

Bond, M. P. (2004). Empirical studies of defense style: Relationships with psychopathology and change. *Harvard Review of Psychiatry*, *12*, 263-278.

Bond, M. P., Gardner, S. T., Christian, J., & Sigal, J. J. (1983). Empirical study of self-rated defense

styles. *Archives of General Psychiatry*, *40*, 333-338.

Bouchard, G., & Theriault, V. J. (2003). Defense mechanisms and coping strategies in conjugal relationships: An integration. *International Journal of Psychology*, *38*, 79-90.

Brookings, J. B., Zembar, M. J., & Hochstetler, G. M. (2003). An interpersonal circumplex/five-factor analysis of the Rejection Sensitivity Questionnaire. *Personality and Individual Differences*, *34*, 449-461.

Bullitt, C. W., & Farber, B. A. (2002a). Gender differences in defensive style. *Journal of the American Academy of Psychoanalysis and Dynamic Psychiatry*, *30*, 35-51.

Bullitt, C. W., & Farber, B. A. (2002b). Sex differences in the relationship between interpersonal problems and defensive style. *Psychological Reports*, *91*, 767-768.

Cooper, S. H. (1998). Changing notions of defense within psychoanalytic theory. *Journal of Personality*, *66*, 947-964.

Costa, P. T., Zonderman, A. B., & McCrae, R. R. (1991). Personality, defense, coping, and adaptation in older adulthood. In E. M. Cummings, A. L. Greene, & K. H. Karraker (Eds.), *Life-span developmental psychology: Perspectives on stress and coping* (pp. 277- 293). Hillsdale, NJ: Erlbaum.

Cramer, P. (1991). *The development of defense mechanisms*. New York: Springer-Verlag.

Cramer, P. (2000). Defense mechanisms in psychology today: Further processes for adaptation. *American Psychologist*, *55*, 637-646.

Davidson, K., & MacGregor, M. W. (1998). A critical appraisal of self-report defense mechanism measures. *Journal of Personality*, *66*, 965-992.

Fenichel, O. (1945). *The psychoanalytic theory of neurosis*. New York: Norton.

Flannery, R. B., & Perry, J. C. (1990). Self-rated defense style, life stress, and health status: An empirical assessment. *Psychosomatics: Journal of Consultation Liaison Psychiatry*, *31*, 313-320.

Foa, U. G., & Foa, E. B. (1974). *Societal structures of the mind*. Springfield, IL: Thomas.

Freud, S. (1962). The neuro-psychoses of defence. In J. Strachey (Ed. And Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 3, pp. 43-68). London: Hogarth Press. (Original work published 1894)

Giovacchini, P. L. (1984). *Character disorders and adaptive mechanisms*. New York: Jason Aronson.

Gurtman, M. B. (1991). Evaluating the interpersonalness of personality scales. *Personality and Social Psychology Bulletin*, *17*, 670-677.

Gurtman, M. B. (1992). Construct validity of interpersonal personality measures: The interpersonal circumplex as a nomological net. *Journal of Personality and Social Psychology*, *63*, 105-118.

Gurtman, M. B. (1997). Studying personality traits: The circular way. In R. Plutchik & H. R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 81-102). Washington, DC: American Psychological Association.

Gurtman, M. B. (1999). Social competence: An interpersonal analysis and reformulation. *European*

Journal of Psychological Assessment, *15*, 233-245.

Haan, N. (1977). *Coping and defending*. New York: Academic Press.

Horney, K. (1939). *New ways in psychoanalysis*. New York: Norton.

Horney, K. (1945). *Our inner conflicts: A constructive theory of neurosis*. New York: Norton.

Kernberg, O. (1975). *Borderline conditions and pathological narcissism*. New York: Jason Aronson.

Kohut, H. (1984). *How does analysis cure?* Chicago: University of Chicago Press.

LaForge, R., Leary, T. F., Naboisek, H., Coffey, H. S., & Freedman, M. B. (1954). The interpersonal dimension of personality: II. An objective study of repression. *Journal of Personality*, *23*, 129-153.

Leary, T. F. (1957). *Interpersonal diagnosis of personality*. New York: Ronald.

Luxen, M. F. (2005). Gender differences in dominance and affiliation during a demanding interaction. *Journal of Psychology*, *139*, 331-347.

McMahon, C., Barnett, B., Kowalenko, N., & Tennant, C. (2005). Psychological factors associated with persistent postnatal depression: Past and current relationships, defence styles and the mediating role of insecure attachment style. *Journal of Affective Disorders*, *84*, 15-24.

Modell, A. (1975). A narcissistic defense against affects and the illusion of self-sufficiency. *International Journal of Psychoanalysis*, *56*, 275-282.

Nunally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Paulhus, D. L., Fridhandler, B., & Hayes, S. (1997). Psychological defense: Contemporary theory and research. In J. Johnson, R. Hogan, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 543-579). New York: Academic Press.

Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic biases in self-perception: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality*, *66*, 1025-1060.

Ruiz, J. M., Smith, T. W., & Rhodewalt, F. (2001). Distinguishing narcissism and hostility: Similarities and differences in interpersonal circumplex and five-factor correlates. *Journal of Personality Assessment*, *76*, 537-555.

Stolorow, R., & Lachmann, F. (1980). *Psychoanalysis of developmental arrests*. New York: International Universities Press.

Sullivan, H. (1953). *The interpersonal theory of psychiatry*. New York: Norton.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. *Advances in Experimental Social Psychology*, *21*, 181-227.

Tracey, T. J., Ryan, J. M., & Jaschik-Herman, B. (2001). Complementarity of interpersonal circumplex traits. *Personality and Social Psychology Bulletin*, *27*, 786-797.

Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology*, *59*, 781-790.

Ungerer, J. A., Waters, B., Barnett, B., & Dolby, R. (1997). Defense style and adjustment in interpersonal relationships. *Journal of Research in Personality*, *31*, 375-384.

Vaillant, G. (1977). *Adaptation to life*. Boston: Little, Brown.

Vaillant, G. (1992). *Ego mechanisms of defense: A guide for clinicians and researchers*. Washington, DC: American Psychiatric Press.

Vaillant, G. E., Bond, M., & Vaillant, C. O. (1986). An empirically validated hierarchy of defense mechanisms. *Archives of General Psychiatry*, *43*, 786-794.

Westen, D. (1998). The scientific legacy of Sigmund Freud: Toward a psychodynamically informed psychological science. *Psychological Bulletin*, *124*, 333-371.

Westerman, M. A. (1998). Reconceptualizing defense as a special type of problematic interpersonal behavior pattern: A fundamental breach by an agent-in-a-situation. *Journal of Mind and Behavior*, *19*, 257-302.

Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In W. M. Grove & D. Ciccetti (Eds.), *Thinking clearly about psychology: Vol. 2. Personality and psychopathology* (pp. 89-113). Minneapolis, MN: University of Minnesota Press.

Wiggins, J. S. (1995). *Interpersonal Adjective Scales professional manual*. Odessa, FL: Psychological Assessment Resources.

Wiggins, J. S., & Broughton, R. (1991). A geometric taxonomy of personality scales. *European Journal of Personality*, *5*, 343-365.

Wiggins, J. S., Phillips, N., & Trapnell, P. D. (1989). Circular reasoning about interpersonal behavior: Evidence concerning some untested assumptions underlying diagnostic classification. *Journal of Personality and Social Psychology*, *56*, 296-305.

Winnicott, D. (1965). *Maturational processes and the facilitating environment*. New York: International Universities Press.

Zeigler-Hill, V. (2006). Contingent self-esteem and the interpersonal circumplex: The interpersonal pursuit of self-esteem. *Personality and Individual Differences*, *40*, 713-723.