

## Supplemental Material

Items appearing in the supplement:

1. Table S1. Clinical and Demographic Characteristics.
2. Table S2. Model 1: CFA One Factor Solution.
3. Table S3. Model 2: CFA Six Factor Oblique Solution.
4. Table S4. Model 3: Bifactor Solution - 1 General Factor 2 Specific Factors.
5. Table S5. Model 4: Bifactor Solution - 1 General Factor 3 Specific Factors.
6. Additional Bifactor Indices.
7. Table S6. Variance in Unit-Weighted Subscale Scores.
8. Table S7. Additional Validity Analyses: Associations with Interpersonal Problems in the Community Sample Controlling for the Four Remaining Domains of the FFM.
9. Table S8. Correlations between Components of Neuroticism and Anxiety in the Pittsburgh Subgroup (n=59) of the Depression Sample.
10. Table S9. Criterion Validity: Associations with Interpersonal Problems in the Pittsburgh Subgroup (N=59) of the Depression Sample.
11. Circumplex Analyses.
12. Table S10. Structural Summary Model Results of Associations with the Inventory of Interpersonal Problems Circumplex Scales in the Community Sample.
13. Figure S1: Coordinate Plots of the Association between each Component of the Bifactor Model and Circumplex Scales of the Inventory of Interpersonal Problems.

Table S1. Clinical and Demographic Characteristics.

Variable	Depression Sample		Community Sample	
	N	Mean (SD) / %	N	Mean (SD) / %
Age	805	40.35 (11.38)	1284	44.64 (6.75)
Neuroticism - Total Score	807	119.55 (23.73)	1284	74.32 (23.22)
Neuroticism - Facet Scores				
Anxiety	807	21.53 (5.20)	1284	12.99 (5.26)
Angry hostility	807	17.65 (5.57)	1284	11.62 (5.21)
Depression	807	23.77 (5.33)	1284	11.54 (5.77)
Self-consciousness	807	19.99 (5.49)	1284	13.97 (4.87)
Impulsiveness	807	18.70 (5.10)	1284	15.18 (4.56)
Vulnerability	807	17.90 (5.41)	1284	9.02 (4.17)
Depression symptoms				
Hamilton Rating Scale for Depression	732	18.67 (6.54)	-	-
Beck Depression Inventory	-	-	1276	4.03 (4.76)
Anxiety symptoms				
Hamilton Rating Scale for Anxiety	59	21.93 (8.30)	-	-
SCID - Anxiety Symptom Count	658	6.28 (7.02)	-	-
Female	807	62.21%	1284	52.73%
Married	791	37.42%	1284	64.56%
Post-secondary school education	767	76.14%	1284	86.92%
Any Axis-I Diagnosis	807	100.00%	1284	20.02%
Depressive-spectrum disorder	807	100.00%	1284	1.40%
Major depressive disorder	807	97.03%	1284	0.93%
Dysthymic Disorder	807	2.60%	1284	0.31%

Depressive disorder NOS	807	0.37%	1284	0.16%
-------------------------	-----	-------	------	-------

---

Note. SCID = Structured Clinical Interview for DSM-IV Diagnoses, NOS = Not otherwise specified. Ns vary due to missing data.

Table S2. Model 1: CFA One Factor Solution

Neo-PI-R Item#	Original Facet	Sample	
		Depression	Community
001	Anxiety	<b>0.39</b>	<b>0.36</b>
031	Anxiety	<b>0.52</b>	<b>0.47</b>
061	Anxiety	<b>0.67</b>	<b>0.67</b>
091	Anxiety	<b>0.62</b>	<b>0.72</b>
121	Anxiety	<b>0.47</b>	<b>0.55</b>
151	Anxiety	<b>0.63</b>	<b>0.65</b>
181	Anxiety	<b>0.52</b>	<b>0.48</b>
211	Anxiety	<b>0.49</b>	<b>0.58</b>
006	Angry Hostility	<b>0.55</b>	<b>0.56</b>
036	Angry Hostility	<b>0.53</b>	<b>0.56</b>
066	Angry Hostility	<b>0.37</b>	<b>0.48</b>
096	Angry Hostility	<b>0.43</b>	<b>0.51</b>
126	Angry Hostility	<b>0.40</b>	<b>0.49</b>
156	Angry Hostility	<b>0.46</b>	<b>0.49</b>
186	Angry Hostility	<b>0.50</b>	<b>0.54</b>
216	Angry Hostility	<b>0.59</b>	<b>0.56</b>
011	Depression	<b>0.52</b>	<b>0.64</b>
041	Depression	<b>0.70</b>	<b>0.74</b>
071	Depression	<b>0.57</b>	<b>0.70</b>
101	Depression	<b>0.53</b>	<b>0.47</b>
131	Depression	<b>0.54</b>	<b>0.51</b>
161	Depression	<b>0.72</b>	<b>0.72</b>

191	Depression	<b>0.69</b>	<b>0.75</b>
221	Depression	<b>0.71</b>	<b>0.75</b>
016	Self-consciousness	<b>0.55</b>	<b>0.43</b>
046	Self-consciousness	<b>0.53</b>	<b>0.46</b>
076	Self-consciousness	<b>0.56</b>	<b>0.63</b>
106	Self-consciousness	<b>0.40</b>	<b>0.34</b>
136	Self-consciousness	<b>0.66</b>	<b>0.73</b>
166	Self-consciousness	<b>0.53</b>	<b>0.50</b>
196	Self-consciousness	<b>0.48</b>	<b>0.45</b>
226	Self-consciousness	0.28	0.17
021	Impulsiveness	<b>0.32</b>	<b>0.31</b>
051	Impulsiveness	<b>0.39</b>	<b>0.46</b>
081	Impulsiveness	0.16	0.19
111	Impulsiveness	0.25	0.30
141	Impulsiveness	0.28	0.26
171	Impulsiveness	0.22	<b>0.42</b>
201	Impulsiveness	<b>0.39</b>	<b>0.52</b>
231	Impulsiveness	<b>0.47</b>	<b>0.46</b>
026	Vulnerability	<b>0.60</b>	<b>0.64</b>
056	Vulnerability	<b>0.65</b>	<b>0.61</b>
086	Vulnerability	<b>0.59</b>	<b>0.66</b>
116	Vulnerability	<b>0.35</b>	<b>0.50</b>
146	Vulnerability	<b>0.52</b>	<b>0.55</b>
176	Vulnerability	<b>0.43</b>	<b>0.59</b>
206	Vulnerability	<b>0.50</b>	<b>0.60</b>

236

Vulnerability

**0.70**

**0.67**

---

Note. Loadings > |0.30| are bolded.

Table S3. Model 2: CFA Six Factor Oblique Solution

NEO PI-R													
Item#	Facet	A.	A.H.	D.	S.C.	I.	V.	A.	A.H.	D.	S.C.	I.	V.
Depression Sample							Community Sample						
001	A.	<b>0.45</b>						<b>0.41</b>					
031	A.	<b>0.60</b>						<b>0.53</b>					
061	A.	<b>0.76</b>						<b>0.75</b>					
091	A.	<b>0.69</b>						<b>0.80</b>					
121	A.	<b>0.54</b>						<b>0.62</b>					
151	A.	<b>0.72</b>						<b>0.73</b>					
181	A.	<b>0.60</b>						<b>0.54</b>					
211	A.	<b>0.56</b>						<b>0.65</b>					
006	A.H.		<b>0.72</b>					<b>0.68</b>					
036	A.H.		<b>0.71</b>					<b>0.70</b>					
066	A.H.		<b>0.54</b>					<b>0.61</b>					
096	A.H.		<b>0.56</b>					<b>0.63</b>					
126	A.H.		<b>0.52</b>					<b>0.59</b>					
156	A.H.		<b>0.62</b>					<b>0.62</b>					
186	A.H.		<b>0.63</b>					<b>0.65</b>					
216	A.H.		<b>0.75</b>					<b>0.69</b>					
011	D.			<b>0.57</b>				<b>0.67</b>					
041	D.			<b>0.75</b>				<b>0.77</b>					
071	D.			<b>0.62</b>				<b>0.73</b>					
101	D.			<b>0.58</b>				<b>0.50</b>					
131	D.			<b>0.59</b>				<b>0.53</b>					
161	D.			<b>0.78</b>				<b>0.76</b>					
191	D.			<b>0.75</b>				<b>0.79</b>					
221	D.			<b>0.76</b>				<b>0.79</b>					
016	S.C.				<b>0.63</b>						<b>0.49</b>		

046	S.C.	<b>0.61</b>	<b>0.52</b>
076	S.C.	<b>0.64</b>	<b>0.71</b>
106	S.C.	<b>0.46</b>	<b>0.39</b>
136	S.C.	<b>0.76</b>	<b>0.82</b>
166	S.C.	<b>0.60</b>	<b>0.56</b>
196	S.C.	<b>0.55</b>	<b>0.51</b>
226	S.C.	<b>0.33</b>	0.21
021	I.	<b>0.58</b>	<b>0.47</b>
051	I.	<b>0.67</b>	<b>0.67</b>
081	I.	0.28	0.27
111	I.	<b>0.46</b>	<b>0.45</b>
141	I.	<b>0.50</b>	<b>0.40</b>
171	I.	<b>0.42</b>	<b>0.59</b>
201	I.	<b>0.63</b>	<b>0.73</b>
231	I.	<b>0.71</b>	<b>0.64</b>
026	V.	<b>0.66</b>	<b>0.70</b>
056	V.	<b>0.72</b>	<b>0.67</b>
086	V.	<b>0.65</b>	<b>0.73</b>
116	V.	<b>0.40</b>	<b>0.56</b>
146	V.	<b>0.58</b>	<b>0.61</b>
176	V.	<b>0.49</b>	<b>0.66</b>
206	V.	<b>0.56</b>	<b>0.67</b>
236	V.	<b>0.78</b>	<b>0.74</b>

---

Note. N.A.=Negative Affectivity, A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability. Loadings > |0.30| are bolded.



Table S4. Model 3: Bifactor Solution - 1 General Factor 2 Specific Factors

NEO PI-R		General			Specific		
Item#	Facet	N.A.	E.V.	Vol.	N.A.	E.V.	Vol.
Depression Sample				Community Sample			
001	A.	<b>0.41</b>	-0.04		<b>0.35</b>	0.12	
031	A.	<b>0.56</b>	-0.17		<b>0.43</b>	<b>0.36</b>	
061	A.	<b>0.69</b>	-0.03		<b>0.67</b>	0.12	
091	A.	<b>0.64</b>	-0.03		<b>0.73</b>	0.06	
121	A.	<b>0.47</b>	0.15		<b>0.56</b>	0.04	
151	A.	<b>0.64</b>	0.07		<b>0.66</b>	0.07	
181	A.	<b>0.55</b>	-0.08		<b>0.45</b>	0.29	
211	A.	<b>0.50</b>	0.04		<b>0.60</b>	-0.01	
006	A.H.	<b>0.49</b>		<b>0.40</b>	<b>0.53</b>		0.25
036	A.H.	<b>0.40</b>		<b>0.59</b>	<b>0.43</b>		<b>0.64</b>
066	A.H.	0.20		<b>0.67</b>	<b>0.34</b>		<b>0.68</b>
096	A.H.	<b>0.33</b>		<b>0.44</b>	<b>0.45</b>		<b>0.41</b>
126	A.H.	<b>0.34</b>		<b>0.31</b>	<b>0.46</b>		0.25
156	A.H.	<b>0.33</b>		<b>0.55</b>	<b>0.38</b>		<b>0.60</b>
186	A.H.	<b>0.48</b>		0.17	<b>0.53</b>		0.15
216	A.H.	<b>0.55</b>		0.26	<b>0.52</b>		<b>0.33</b>
011	D.	<b>0.51</b>	0.21		<b>0.67</b>	-0.18	
041	D.	<b>0.65</b>	<b>0.41</b>		<b>0.77</b>	-0.14	
071	D.	<b>0.55</b>	0.26		<b>0.73</b>	-0.16	
101	D.	<b>0.51</b>	0.27		<b>0.50</b>	-0.11	
131	D.	<b>0.51</b>	<b>0.33</b>		<b>0.52</b>	0.02	

161	D.	<b>0.69</b>	<b>0.35</b>	<b>0.73</b>	0.07
191	D.	<b>0.67</b>	0.29	<b>0.78</b>	-0.15
221	D.	<b>0.71</b>	0.11	<b>0.76</b>	0.09
016	S.C.	<b>0.54</b>	0.17	<b>0.43</b>	0.11
046	S.C.	<b>0.53</b>	0.16	<b>0.46</b>	0.13
076	S.C.	<b>0.54</b>	0.25	<b>0.66</b>	-0.06
106	S.C.	<b>0.40</b>	0.10	<b>0.32</b>	0.21
136	S.C.	<b>0.63</b>	<b>0.32</b>	<b>0.73</b>	0.12
166	S.C.	<b>0.55</b>	-0.07	<b>0.48</b>	0.22
196	S.C.	<b>0.47</b>	0.17	<b>0.44</b>	0.13
226	S.C.	0.27	0.21	0.17	0.07
021	I.	0.21	<b>0.52</b>	0.25	<b>0.37</b>
051	I.	0.28	<b>0.51</b>	<b>0.41</b>	<b>0.35</b>
081	I.	0.12	0.20	0.18	0.09
111	I.	0.15	<b>0.43</b>	0.25	<b>0.31</b>
141	I.	0.17	<b>0.48</b>	0.20	<b>0.33</b>
171	I.	0.14	<b>0.40</b>	<b>0.40</b>	0.18
201	I.	<b>0.32</b>	<b>0.38</b>	<b>0.49</b>	0.28
231	I.	<b>0.42</b>	<b>0.34</b>	<b>0.39</b>	<b>0.44</b>
026	V.	<b>0.61</b>	0.01	<b>0.63</b>	0.16
056	V.	<b>0.67</b>	-0.01	<b>0.59</b>	0.19
086	V.	<b>0.60</b>	0.06	<b>0.66</b>	0.12
116	V.	<b>0.41</b>	<b>-0.63</b>	<b>0.38</b>	<b>0.65</b>
146	V.	<b>0.54</b>	0.02	<b>0.54</b>	0.21
176	V.	<b>0.50</b>	<b>-0.57</b>	<b>0.47</b>	<b>0.76</b>
206	V.	<b>0.54</b>	-0.13	<b>0.57</b>	<b>0.32</b>

236      V.      **0.72**      0.02                      **0.66**      0.12

---

Note. N.A.=Negative Affectivity, E.V. = Emotional Vulnerability, Vol. = Volatility, A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability. Values represent loadings from an orthogonal bifactor model. Loadings > |0.30| are bolded.

Table S5. Model 4: Bifactor Solution - 1 General Factor 3 Specific Factors

NEO PI-R		General		Specific		General		Specific	
Item#	Facet	N.A.	E.V.	Vol.	Dep.	N.A.	E.V.	Vol.	Dep.
			Depression Sample				Community Sample		
001	A.	<b>0.40</b>	0.04			<b>0.34</b>	0.18		
031	A.	<b>0.53</b>	0.16			<b>0.41</b>	<b>0.39</b>		
061	A.	<b>0.68</b>	0.09			<b>0.66</b>	0.21		
091	A.	<b>0.63</b>	0.04			<b>0.72</b>	0.10		
121	A.	<b>0.50</b>	-0.06			<b>0.55</b>	0.11		
151	A.	<b>0.65</b>	-0.04			<b>0.66</b>	0.11		
181	A.	<b>0.54</b>	0.09			<b>0.43</b>	<b>0.36</b>		
211	A.	<b>0.51</b>	-0.04			<b>0.60</b>	0.04		
006	A.H.	<b>0.49</b>		<b>0.40</b>		<b>0.54</b>		0.24	
036	A.H.	<b>0.40</b>		<b>0.59</b>		<b>0.44</b>		<b>0.64</b>	
066	A.H.	0.20		<b>0.68</b>		<b>0.35</b>		<b>0.68</b>	
096	A.H.	<b>0.33</b>		<b>0.44</b>		<b>0.45</b>		<b>0.41</b>	
126	A.H.	<b>0.34</b>		<b>0.31</b>		<b>0.46</b>		0.24	
156	A.H.	<b>0.33</b>		<b>0.56</b>		<b>0.38</b>		<b>0.60</b>	
186	A.H.	<b>0.48</b>		0.17		<b>0.54</b>		0.14	
216	A.H.	<b>0.56</b>		0.26		<b>0.52</b>		<b>0.33</b>	
011	D.	<b>0.48</b>			<b>0.39</b>	<b>0.63</b>			<b>0.44</b>
041	D.	<b>0.65</b>			<b>0.49</b>	<b>0.75</b>			0.15
071	D.	<b>0.53</b>			<b>0.40</b>	<b>0.69</b>			<b>0.52</b>
101	D.	<b>0.54</b>			0.12	<b>0.50</b>			-0.14
131	D.	<b>0.53</b>			0.21	<b>0.54</b>			-0.14

161	D.	<b>0.69</b>		<b>0.35</b>	<b>0.75</b>		-0.06
191	D.	<b>0.66</b>		<b>0.35</b>	<b>0.77</b>		0.16
221	D.	<b>0.72</b>		0.07	<b>0.78</b>		-0.02
016	S.C.	<b>0.58</b>	-0.15		<b>0.43</b>	0.09	
046	S.C.	<b>0.56</b>	-0.11		<b>0.45</b>	0.15	
076	S.C.	<b>0.59</b>	-0.13		<b>0.67</b>	-0.07	
106	S.C.	<b>0.42</b>	-0.13		<b>0.32</b>	0.19	
136	S.C.	<b>0.69</b>	-0.09		<b>0.74</b>	0.09	
166	S.C.	<b>0.53</b>	0.17		<b>0.48</b>	0.22	
196	S.C.	<b>0.50</b>	-0.10		<b>0.44</b>	0.11	
226	S.C.	<b>0.31</b>	-0.19		0.18	0.03	
021	I.	0.21		<b>0.52</b>	0.26		<b>0.37</b>
051	I.	0.29		<b>0.51</b>	<b>0.42</b>		<b>0.34</b>
081	I.	0.12		0.20	0.18		0.09
111	I.	0.15		<b>0.42</b>	0.25		0.30
141	I.	0.17		<b>0.48</b>	0.21		<b>0.33</b>
171	I.	0.14		<b>0.39</b>	<b>0.41</b>		0.17
201	I.	<b>0.33</b>		<b>0.38</b>	<b>0.50</b>		0.27
231	I.	<b>0.42</b>		<b>0.34</b>	<b>0.39</b>		<b>0.44</b>
026	V.	<b>0.61</b>	0.13		<b>0.63</b>	0.16	
056	V.	<b>0.66</b>	0.20		<b>0.58</b>	0.23	
086	V.	<b>0.61</b>	0.02		<b>0.65</b>	0.14	
116	V.	0.28	<b>0.66</b>		<b>0.35</b>	<b>0.67</b>	
146	V.	<b>0.53</b>	0.09		<b>0.53</b>	0.20	
176	V.	<b>0.37</b>	<b>0.78</b>		<b>0.44</b>	<b>0.78</b>	
206	V.	<b>0.50</b>	0.30		<b>0.55</b>	<b>0.34</b>	

236      V.      **0.71**      0.16                      **0.66**      0.16

---

Note. N.A.=Negative Affectivity, E.V. = Emotional Vulnerability, Vol. = Volatility, Dep. = Depression,  
A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability.  
Values represent loadings from an orthogonal bifactor model. Loadings > |0.30| are bolded.

## **Additional Bifactor Indices**

In addition to the indices we reported in the main text that evaluated the bifactor models, another set of indices that can be calculated for bifactor model structures is the relative breakdown of the variance in unit-weighted subscale scores that is attributable to the general factor versus the variance attributable to the specific factor in question (Rodriguez, Reise, & Haviland, 2015). In the context of this study, unit-weighted subscale scores represent nothing more than the simple facet scores from the NEO-PI-R, calculated in the standard manner. In Table S6 below, we report the percentage of reliable variance in these unit-weighted subscale scores ( $\omega$ -subscale) as well as the relative contributions of the sources of variance in each score.

Overall reliability was high in both samples ( $\geq 0.77$ ). For the depression sample, a larger proportion of variance in unit-weighted scores for the Anxiety, Depression, Self-Consciousness, and Vulnerability facets originated from the influence of the general factor than from the specific factors themselves. By contrast, for the Angry hostility and Impulsiveness facets, a larger proportion of variance was attributable to individual differences on the relevant specific factors (controlling for the general factor). In the community sample, the general factor accounted for more of the reliable variance than did the specific factor in question for all of the facets with the exception of Impulsiveness. These patterns are not surprising. As described in the main text, scores on the general factor are also highly correlated with measures of depression and anxiety. The importance of using bifactor-model estimates of the specific factors (as opposed to standard unit-weighted facet scores) can most clearly be seen in the differences in the patterns of correlations between each set of scores and measures of depression and anxiety (Table 3). In the case of the bifactor model estimates, the general factor (which is orthogonal to the specific factors) captured much of the relationships with psychiatric symptoms, and the associations

between symptoms and the specific factors was markedly reduced compared to unweighted facet scores.



Table S6. Variance in Unit-Weighted Subscale Scores

Subscale Reliabilities	Specific Factors					
	A.	A.H.	D.	S.C.	I.	V.
	Depression Sample					
% of reliable variance ( $\omega$ -Subscale)	0.83	0.84	0.87	0.81	0.77	0.85
% of variance explained by specific factor	0.24	0.47	0.15	0.23	0.58	0.18
% of variance explained by general factor	0.59	0.37	0.73	0.57	0.19	0.66
% of non-reliable variance	0.17	0.16	0.13	0.19	0.23	0.15
	Community Sample					
% of reliable variance ( $\omega$ -Subscale)	0.85	0.85	0.89	0.79	0.78	0.87
% of variance explained by specific factor	0.24	0.38	0.03	0.25	0.48	0.20
% of variance explained by general factor	0.60	0.48	0.85	0.54	0.30	0.67
% of non-reliable variance	0.15	0.15	0.11	0.21	0.22	0.13

Note. A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability.  $\omega$ -Subscale estimates the proportion of reliable variance in the unit-weighted subscale associated with each specific factor. The percentage of variance associated with the specific and general factors sum to  $\omega$ -Subscale. The addition of the percent of non-reliable variance to  $\omega$ -Subscale sums to unity.

Table S7. Additional Validity Analyses: Associations with Interpersonal Problems in the Community Sample Controlling for the Four Remaining Domains of the FFM.

IIP Subscales	Symptoms	General			Specific				Additional FFM Domains			
	Dep.	N.A.	A.	A.H.	D.	S.C.	I.	V.	O.	C.	E.	Ag.
Interpersonal Sensitivity	0.26***	0.40***	0.06	0.03	-0.08*	0.29***	0.08**	-0.02	0.09**	-0.14***	-0.13***	0.03
Interpersonal Ambivalence	0.11***	0.01	-0.06	0.03	0.01	0.02	0.04	0.00	0.10***	-0.10***	-0.14***	-0.20***
Aggression	0.17***	0.25***	-0.16***	0.37***	-0.10**	-0.15***	0.07*	0.02	-0.05†	-0.07*	0.09**	-0.38***
Need for Approval	0.21***	0.45***	0.04	-0.10***	-0.09**	0.25***	0.05†	-0.07*	-0.01	-0.16***	-0.05†	0.16***
Lack of Sociability	0.17***	0.21***	-0.03	-0.08**	-0.03	0.27***	0.04	-0.07**	0.03	-0.08**	-0.52***	0.03

Note. IIP = Inventory of Interpersonal Problems, Dep. = Depression symptoms, N.A.=Negative Affectivity, A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability, FFM=Five Factor Model, O.=Openness, C.=Conscientiousness, E.=Extraversion, Ag.=Agreeableness. Values represent standardized beta estimates from structural equation models in which all of the independent variables, displayed in the columns, were examined simultaneously. Separate models were estimated for each IIP Subscale (row). †=p<0.10, \*=p<0.05, \*\*=p<.01, \*\*\*p<0.001

Table S8. Correlations between Components of Neuroticism and Anxiety in the Pittsburgh Subgroup (n=59) of the Depression Sample.

Neuroticism Component	Anxiety
Unit-Weighted Raw Scores	
Total Neuroticism	<b>0.33 [0.08 – 0.54]</b>
Neuroticism Facet:	
Anxiety	<b>0.26 [0.00 – 0.48]</b>
Angry hostility	<b>0.26 [0.01 – 0.49]</b>
Depression	<b>0.30 [0.05 – 0.52]</b>
Self-consciousness	<b>0.27 [0.01 – 0.49]</b>
Impulsiveness	0.24 [-0.01 – 0.47]
Vulnerability	<b>0.26 [0.01 – 0.49]</b>
Bifactor Components	
General Factor: Negative Affectivity	<b>0.33 [0.09 – 0.54]</b>
Specific Factor:	
Anxiety	-0.02 [-0.27 – 0.24]
Angry hostility	0.09 [-0.17 – 0.34]
Depression	0.11 [-0.15 – 0.36]
Self-consciousness	0.08 [-0.18 – 0.33]
Impulsiveness	0.09 [-0.17 – 0.34]
Vulnerability	0.16 [-0.10 – 0.40]

Note. Values represent correlation coefficients and 95% confidence intervals. Anxiety was assessed using the HRSA (Hamilton Rating Scale for Anxiety). Bolded values are statistically significant at  $p < 0.05$ .

Table S9. Criterion Validity: Associations with Interpersonal Problems in the Pittsburgh Subgroup (N=59) of the Depression Sample.

IIP Subscales	Symptoms		General			Specific			
	Dep.	Anx.	N.A.	A.	A.H.	D.	S.C.	I.	V.
Interpersonal Sensitivity	-0.03	0.08	0.52***	0.03	0.42***	-0.02	0.33***	0.18†	-0.08
Interpersonal Ambivalence	0.21	0.02	0.43**	0.00	0.20†	0.04	0.19†	0.20†	-0.08
Aggression	-0.23†	0.44**	0.25*	0.04	0.60***	-0.16	0.09	0.12	-0.13
Need for Approval	0.14	0.08	0.57***	0.05	0.06	-0.09	0.26*	0.00	-0.08
Lack of Sociability	0.06	0.00	0.51***	0.10	0.07	-0.05	0.36**	0.12	-0.03

Note. IIP = Inventory of Interpersonal Problems, Dep. = Depression symptoms, Anx. = Anxiety symptoms, N.A.=Negative Affectivity, A.=Anxiety, A.H.=Angry Hostility, D.=Depression, S.C.=Self-Consciousness, I.=Impulsiveness, V.=Vulnerability. Values represent standardized beta estimates from multiple regression models in which all of the independent variables, displayed in the columns, were entered simultaneously. Given the sample size, regression models were calculated using factor score estimates. †=p<0.10, \*=p<0.05, \*\*=p<.01,\*\*\*p<0.001

## **Circumplex Analyses**

Secondary analyses examined the interpersonal circumplex scales from the IIP. The circumplex scales (Alden, Wiggins, & Pincus, 1990) are based in interpersonal theory, which uses a circumplex representation to organize interpersonal functioning problems around two primary, orthogonal domains: agency and communion (Wiggins, 1991). The eight octants represented in this circular structure and measured by the IIP-Circumplex scales, are:

*Domineering, Vindictive, Cold, Avoidant, Nonassertive, Exploitable, Overly-Nurturant, and Intrusive.*

To examine the relationship between the elements of the bifactor structure of neuroticism and the circumplex scales of the IIP, we used the structural summary modeling (SSM) approach with bootstrap-resampling estimated confidence intervals (Zimmermann & Wright, 2017). The SSM approach estimates the goodness-of-fit of the observed profile of correlations between the IIP octant scales and an external variable (e.g., neuroticism) to the expected pattern of correlations based on circumplex structure (i.e., a sine wave) and yields three critical parameter values that summarize the interpersonal profile of a construct: *elevation*, which represents the average correlation between the construct of interest and the eight octant scales; *amplitude*, which captures the degree to which a differentiated peak is observed in the profile ; and *angular displacement*, which represents the location of the peak in circumplex space and can be used to characterize the interpersonal problem theme of the construct of interest. Given the small number of individuals who completed this measure in the depression sample (n=59), and given the sample requirements for using the structural summary approach (Zimmermann & Wright, 2017), these analyses focus on data from the community sample.

The results of the circumplex analyses are presented in Table S10 and in the

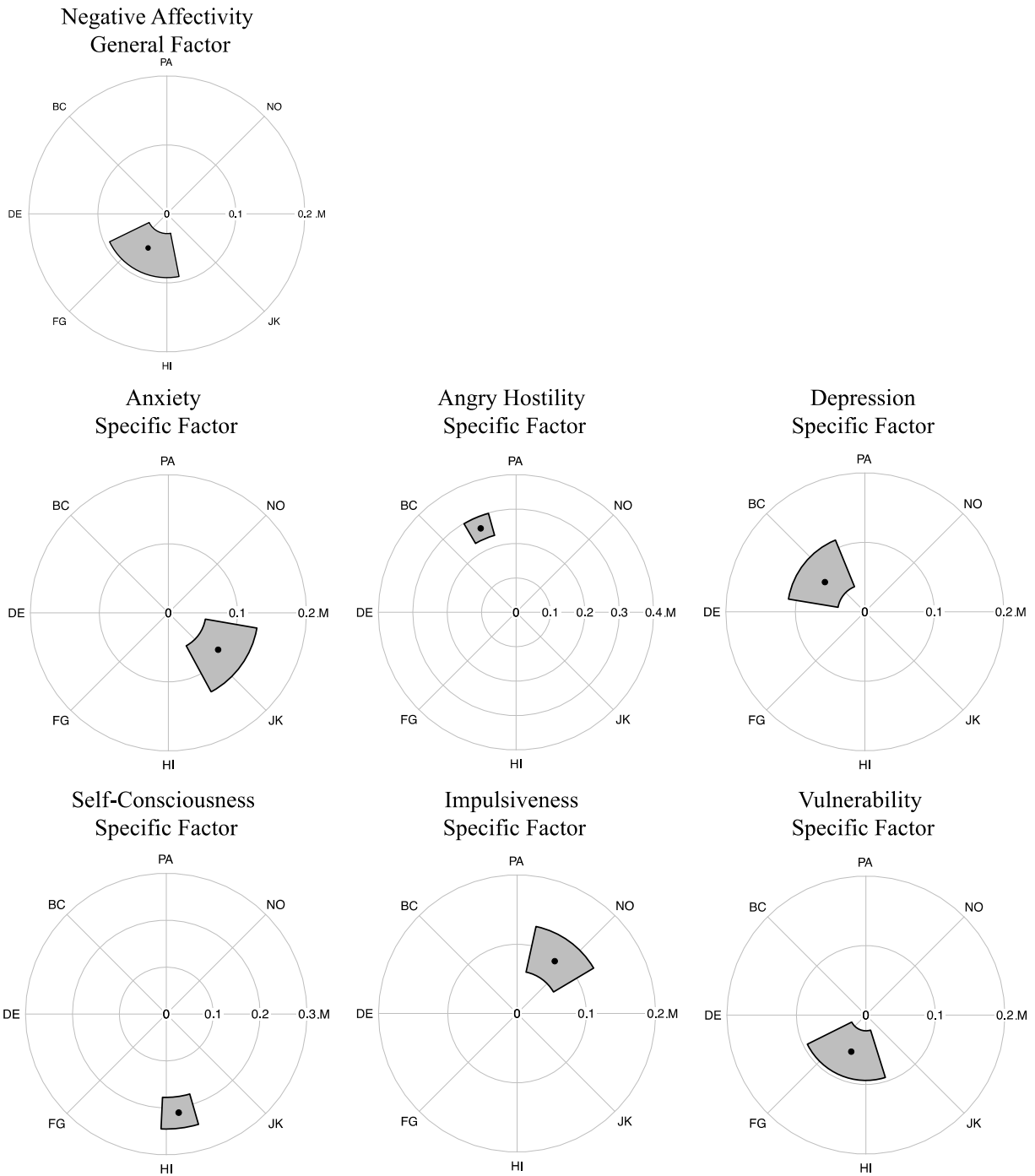
Supplemental Figure. Several aspects of these results are notable. First, the goodness-of-fit estimate for the relationship between the interpersonal circumplex configuration and general Negative Affectivity factor was low (i.e.,  $< .7$ ), suggesting the possibility of an undifferentiated pattern of interpersonal problems associated with the general factor. This possibility was further supported by the observation that the Elevation of the pattern associated with the general factor was high, whereas the amplitude was low. This indicates that the correlations between the general factor and each of the octant scales is high and relatively flat, with no notable peak in any one octant. By contrast, the two specific factors (Angry Hostility and Self-Consciousness) that demonstrated incremental associations with the IIP factor scores also displayed relatively high amplitudes ( $> .2$ ), reflecting more pronounced peaks in their profiles. For the Angry Hostility factor, the profile peaked in the Vindictive octant, whereas Self-Consciousness was associated with a profile that peaked in the Nonassertive octant. Also notable was that the elevation of the Self-Consciousness profile was higher than that observed for any of the other specific factors, suggesting greater general difficulties in interpersonal functioning compared to the other specific factors, with particularly pronounced problems associated with the Nonassertive octant. Comparison of the patterns associated with Angry Hostility and Self-Consciousness suggests that these two specific factors represent interpersonal problems at opposite ends of the dominance domain.

Table S10. Structural Summary Model Results of Associations with the Inventory of Interpersonal Problems Circumplex Scales in the Community Sample.

Bifactor Index	Goodness-of-fit	Elevation	Amplitude	Angular Displacement
General Factor: Negative Affectivity	0.68	0.31 [0.28–0.33]	0.06 [0.03–0.09]	241.75 [205.96–281.04]
Specific Factors				
Anxiety	0.97	0.02 [-0.02–0.05]	0.09 [0.05–0.13]	323.78 [298.44–350.24]
Angry Hostility	0.94	-0.04 [-0.07–-0.01]	0.27 [0.23–0.30]	112.87 [105.61–120.49]
Depression	0.75	-0.02 [-0.05–0.01]	0.07 [0.04–0.11]	142.99 [112.28–170.59]
Self-consciousness	0.98	0.10 [0.07–0.13]	0.21 [0.18–0.25]	277.18 [267.40–286.30]
Impulsiveness	0.87	0.04 [0.01–0.08]	0.09 [0.06–0.13]	54.14 [30.67–77.73]
Vulnerability	0.54	0.03 [-0.01–0.06]	0.06 [0.02–0.09]	248.27 [206.47–287.29]

Note. Brackets represent bootstrap estimated 95% confidence intervals.

Figure S1



Supplemental Figure: Coordinate Plots of the Association between each Component of the Bifactor Model and Circumplex Scales of the Inventory of Interpersonal Problems. Solid dots represent the point-estimate for the location of the association with the construct of interest in circumplex space. Shaded regions represent boot-strap estimated 95% confidence intervals. The octants are defined as follows: PA: Domineering, BC: Vindictive, DE: Cold, FG: Avoidant, HI: Nonassertive, JK: Exploitable, LM: Overly-Nurturant, and NO: Intrusive.



## 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*(3-4), 521-536. doi:10.1080/00223891.1990.9674088
- Rodriguez, A., Reise, S. P., & Haviland, M. G. (2015). Evaluating bifactor models: Calculating and interpreting statistical indices. *Psychological Methods*, *21*(2), 137-150. doi:10.1037/met0000045
- Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In D. Cicchetti & W. M. Grove (Eds.), *Thinking Clearly about Psychology: Essays in Honor of Paul E. Meehl* (pp. 89-113). Minneapolis, MN: University of Minnesota Press.
- Zimmermann, J., & Wright, A. G. C. (2017). Beyond description in interpersonal construct validation. *Assessment*, *24*(1), 3-23. doi:10.1177/1073191115621795