

# An Investigation of the Relationships Between Positive Affect and the Fundamental Fears

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## Introduction

- The expectancy model of fear holds that all common fears can be logically reduced to three fundamental fears that represent inherently noxious stimuli (Taylor, 1993). The fundamental fears are anxiety sensitivity, injury/illness sensitivity, and fear of negative evaluation (Reiss, 1991).
- The fundamental fears are believed to underlie anxiety disorders, and have been associated with a number of these conditions (e.g., panic, and social anxiety disorder; Taylor, 1999; Weeks et al., 2005), as well as anxiety-related health conditions and mood disorders (Carleton et al., 2006, 2009).
- In affect theory, two dominant higher-order dimensions have been advanced: negative affect (NA) and positive affect (PA), which represent negative (e.g., distress, irritability) and positive valences (e.g., enthusiasm, interest), respectively (Barrett & Russell, 1998; Watson et al., 1988).
- NA and PA play an important role in our current understanding of psychopathology and have been associated with mood and anxiety disorders (Brown & Barlow, 2004).
- There is a paucity of research exploring the relationships between the fears and each of NA and PA, despite their associations with anxiety disorders. The purpose of the current investigation was to explore these relationships.

## Method

- Participants included 287 community members.
  - 82 men, ages 18-54 ( $M = 29.85$ ;  $SD = 10.81$ ).
  - 205 women, ages 18-55 ( $M = 29.84$ ;  $SD = 10.70$ ).
- Participants completed a demographic questionnaire and the following self-report measures:
  - Positive and Negative Affect Schedule* (PANAS; Watson et al., 1988), which includes both a NA and PA sub-scale.
  - Anxiety Sensitivity Index-3* (ASI-3; Taylor et al., 2007), which includes three sub-scales relating to cognitive (cog), somatic (som), and social (soc) concerns of anxiety symptoms.
  - Brief Fear of Negative Evaluation scale, version 2* (BFNE-II; Carleton et al., 2007), which is designed to assess fear of negative evaluation.
  - Illness/Injury Sensitivity Index - Revised* (ISI-R; Carleton et al., 2006), which includes an illness sensitivity as well as an injury sensitivity sub-scale.
- A series of eight regression analyses were conducted to determine how the fundamental fears predicted each of NA and PA, and how NA and PA predicted each fundamental fear.
- Participants were divided into four groups according to their NA and PA scores. Subsequently, analyses of variance (ANOVA) were conducted to determine how the groups responded on the fundamental fear questionnaires.

## Results

- Linear regression analyses revealed that the fundamental fears predicted a significant 40% of the variance in NA (Table 1;  $F(6, 286) = 31.10$ ,  $p < .001$ ), and 9% of the variance in PA (Table 2;  $F(6, 286) = 4.57$ ,  $p < .001$ ). The fundamental fears were negatively associated with PA.
- Similarly, NA and PA accounted for significant amounts of the variance in each fear (Table 3), with NA accounting for greater variance ( $r^2 = .12$  to  $.30$ ) than PA ( $r^2 = .03$  to  $.08$ ).
- No significant differences were found between sexes on any self-report measure ( $p > .05$ ).
- K-means cluster analyses divided individuals into four groups:
  - High PA and high NA group (HPA/HNA;  $n = 36$ ).
  - High PA and low NA group (HPA/LNA;  $n = 99$ ).
  - Low PA and high NA group (LPA/HNA;  $n = 59$ ).
  - Low PA and low NA group (LPA/LNA;  $n = 93$ ).
- Results of ANOVA indicated significant between group differences on each fundamental fear measure ( $\lambda = .683$ ;  $F(3, 287)$ ,  $p < .001$ ) with medium to high effect sizes ( $\eta^2 = .11$  to  $.27$ ).
- Post-hoc tests identified a number of specific group differences (Table 4); groups with high NA demonstrated higher fundamental fear scores, whilst reporting even higher scores if also having low PA.

## Discussion

- In the current sample, the fundamental fears predicted a substantive amount of the variance in NA, with ASI-3-Cog, ASI-3-Soc, and ISI-R Illness being the strongest predictors. The converse was also true, with NA predicting substantial variance in each fear, suggesting an interdependent or possibly causal relationship.
- The BFNE-II was the only measure to account for statistically significant variance in PA, while PA predicted relatively less variance than NA in each fear. Accordingly, fearing negative evaluation may be associated with lower levels of PA.
- Individuals reporting high NA scored higher on the fundamental fear questionnaires, suggesting that elevated levels of the fundamental fears may exacerbate NA; in contrast, lower levels of fundamental fears may be associated with increased PA.
- The current study was limited in that it did not include individuals diagnosed with either an anxiety or mood disorder; therefore, the relationship between NA, PA, and the fundamental fears in clinical cases remains unexplored.
- Future research should explore factors that contribute to both NA and PA, with the goal of identifying features that may serve as targets for treatment; moreover, such research should evaluate other cognitive variables to expand our understanding of differences between NA and PA.

Table 1: Predicting NA; Regression model ANOVA summary

Predictors	$\beta$	$t$	$p$	Part
ASI-3-Som	-.07	-1.02	>.10	-.05
ASI-3-Cog	.22	3.40	<.01	.16
ASI-3-Soc	.24	3.23	<.01	.15
BFNE-II	.10	2.59	<.05	.12
ISI-R Injury	-.03	-.04	>.10	<-.01
ISI-R Illness	.24	3.44	<.01	.16

\* $p < .001$ .

Table 2: Predicting PA; Regression model, ANOVA summary

Predictors	$\beta$	$t$	$p$	Part
ASI-3-Som	-.04	-.43	>.10	-.03
ASI-3-Cog	-.07	-.93	>.10	-.05
ASI-3-Soc	-.01	-.07	>.10	<-.01
BFNE-II	-.21	-2.51	<.05	-.15
ISI-R Injury	.01	.13	>.10	.01
ISI-R Illness	-.05	-.61	>.10	-.04

\* $p < .001$ .

Tables 3: NA and PA predicting the fundamental fears

	NA			PA			NA and PA		
	$R^2$	$\beta$	$F$	$R^2$	$\beta$	$F$	$R^2$	$\beta$	$F$
ASI-3-Som	.17	.41	56.86**	.04	-.13	11.87**	.18	30.47**	
ASI-3-Cog	.25	.50	95.79**	.05	-.22	14.55**	.26	50.24**	
ASI-3-Soc	.30	.55	121.40**	.05	-.23	16.39**	.31	63.45**	
BFNE-II	.24	.49	90.82**	.08	-.28	23.43**	.27	51.67**	
ISI-R Injury	.12	.34	37.10**	.02	-.13	5.12*	.12	18.94**	
ISI-R Illness	.19	.43	66.31**	.03	-.16	7.88*	.19	33.76**	

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

Table 4: Between-groups ANOVA summary table

	M (SD) HPA/HNA	M (SD) HPA/LNA	M (SD) LPA/HNA	M (SD) LPA/LNA	$F$	$\eta^2$
ASI-3-Som	6.58 (5.44) <sup>a</sup>	3.38 (3.93) <sup>b</sup>	9.00 (5.90) <sup>c</sup>	4.77 (4.96) <sup>ab</sup>	17.32*	.16
ASI-3-Cog	6.39 (5.93) <sup>a</sup>	2.59 (3.58) <sup>b</sup>	8.93 (6.71) <sup>c</sup>	3.65 (4.10) <sup>b</sup>	24.19*	.20
ASI-3-Soc	11.56 (5.34) <sup>a</sup>	6.18 (4.99) <sup>b</sup>	13.78 (6.14) <sup>a</sup>	8.03 (5.60) <sup>c</sup>	27.23*	.22
BFNE-II	28.31 (12.32) <sup>ac</sup>	16.90 (13.09) <sup>b</sup>	32.83 (14.44) <sup>a</sup>	23.31 (14.76) <sup>c</sup>	34.78*	.27
ISI-R Injury	5.14 (4.72) <sup>ac</sup>	2.93 (3.30) <sup>bd</sup>	6.83 (4.92) <sup>a</sup>	4.03 (4.27) <sup>cd</sup>	17.78*	.16
ISI-R Illness	7.50 (5.49) <sup>a</sup>	4.21 (3.88) <sup>b</sup>	9.73 (6.06) <sup>c</sup>	5.42 (4.73) <sup>b</sup>	11.37*	.11

\* $p < .001$ . Means in columns with different superscripts are significantly different ( $p < .05$ )