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Affect and Cognitive Failures: A Comparison of Positive and Negative Mood Factors

Michael Schnapp '08 and Tabitha W. Payne, Ph.D.

Background and Purpose

The purpose of this research is to better understand the connection between affect or mood and potential effects on cognitive functioning, in particular executive processes. There is evidence that affect, at least with clinically depressed populations, is associated with cognitive deficits that are related to everyday activities (Sullivan & Payne, 2007). Prior research on this issue has focused on clinically depressed populations, however, little attention has been given to mood, in general, for individuals not necessarily diagnosed or suffering with affective disorders. Cognitive failures are defined as an inability to successfully perform a task that one is typically capable of (Wallace et al., 2002).

Materials

- The *Demographic Survey* consisted of 11 questions asking about age, institution attended, gender, class year, and clinical history, and recent stressful events.
- The *Cognitive Failures Questionnaire (CFQ)*, Broadbent, Cooper, FitzGerald, & Parkes, 1982) is a self-assessment scale that measures a person's likelihood of committing an error in the completion of an everyday task. Participants were asked to rate on a 5-point scale (0=never, 4= very often) how often they have experienced each of 25 given examples of cognitive failures. Scores range from 0-100, all items are positively correlated with each other. The Cronbach's alpha was found to be .91, and has a .82 test-retest reliability over a 2 month period (Vom Hofe, Mainemarre, & Vannier, 1998).
- The *PANAS-X* (PANAS-X Manual, Watson & Clark, 1994) consists of 60 adjectives describing feelings and emotions, like "cheerful", "excited", or "distressed", in order to assess self-reported affect over the past week. Participants are asked to rate how often these were felt over the past week on a 5 point scale (1= Very slightly/not at all, 5=extremely). The *PANAS-X* (Positive and Negative Affect Scale) is an extended version of the original PANAS, and includes 4 positive emotion scales, 3 negative, and 4 affective state scales (like fatigue or surprise), in addition to only positive and negative affect.

Method

Our non-clinical sample consisted of 129 participants who were current or had recently graduated from small central Ohio colleges. There were 45 males and 84 females in the sample population. The mean age was 22 years old. Participants were administered a Demographic and psychological history survey, the CFQ, and the PANAS-X. Participants were tested in groups of 20-30, and Gambier residents during the summer were tested in smaller groups or individually

Results

	PA	NA	1	2	3	4	5	6	7	8	9	10
Positive Affect												
Negative Affect	-.06											
1. Fear	-.01	.85**										
2. Hostility	-.04	.79**	.53**									
3. Guilt	-.06	.82**	.61**	.62**								
4. Sadness	-.22*	.68**	.47**	.55**	.63**							
5. Joviality	.80**	-.22*	-.10	-.18*	-.25**	-.31**						
6. Self-Assurance	.80**	-.09	-.05	.01	-.15	-.21*	.64**					
7. Attentiveness	.86**	-.17	-.12	-.09	-.11	-.24*	.60**	.64**				
8. Shyness	-.11	.41**	.39**	.25**	.47**	.28*	-.09	-.24**	-.16			
9. Fatigue	-.14	.52**	.35**	.46**	.47**	.41**	-.14	-.21*	-.15	.14		
10. Serenity	.46**	-.44**	-.32**	-.42**	-.34**	-.35**	.61**	.34**	.36**	.00	-.34**	
11. Surprise	.21*	.04	.17	-.02	.03	.06	.21*	.17	.11	.08	-.03	.04

** P<.01, * P<.05

	Total CFQ	CFQ Factors			
		1. Memory	2. Distractibility	3. Blunders	4. Names
Positive Affect	-.119	-.092	-.205*	-.078	.062
Negative Affect	.490**	.418**	.405**	.496**	.190*
1. Fear	.412**	.375**	.362**	.389**	.150
2. Hostility	.375**	.307**	.265**	.420**	.171
3. Guilt	.425**	.330**	.364**	.461**	.166
4. Sadness	.278**	.260**	.265**	.242**	.065
5. Joviality	-.149	-.105	-.172	-.155	.002
6. Self-Assurance	-.087	-.078	-.161	-.045	.100
7. Attentiveness	-.153	-.138	-.218*	-.118	.059
8. Shyness	.356**	.337**	.338**	.302**	.141
9. Fatigue	.370**	.276**	.351**	.348**	.147
10. Serenity	-.268**	-.259**	-.280**	-.252**	.043
11. Surprise	.044	.096	-.004	.021	.050

Discussion

Our findings supported our hypothesis: higher negative affect, but not higher positive affect was significantly correlated with higher scores on the CFQ. Each basic negative emotional factor scale (Fear, Sadness, Guilt, and Hostility) was significantly correlated with scores both on the whole CFQ, and each CFQ factor, with the exception of Names. Results confirm that in addition to Sadness and Fear, reported levels of guilt and hostility appear to lead to problems with cognitive functioning. Of the four "other" affective state factor scales, Shyness, Fatigue, Serenity, and Surprise, only Fatigue had been demonstrated by previous research to be correlated with higher frequencies of reported cognitive failures. Results of this study not only confirm that higher incidence of cognitive failures are related to fatigue, but also to serenity and shyness. One way that we have made sense of these findings is that we found a strong positive correlation between reported levels of shyness and negative affect ($r = .406$), and a strong negative correlation between Serenity and negative affect ($r = -.438$). It does make intuitive sense that a serene person would experience higher levels of positive affect, while one who is shy would experience higher levels of anxiety. In fact previous studies, such as Cowden (2005) found a strong correlation (.51, $p < .01$) between shyness and negative affect. The benefits of the results from this study are that they raise awareness that mood is intricately related to our ability to function cognitively on a day to day basis. Prior to this research, there was a lack of investigation in a non-clinical sample.

Applicability

Our results indicate it would be advantageous for institutions to identify those with extreme ratings for negative affect, and other affective factors, such as fatigue or shyness, since they predict failures in everyday activities; these in turn, are predictive of automobile and work-related accidents (Wallace & Vodanovich, 2003).

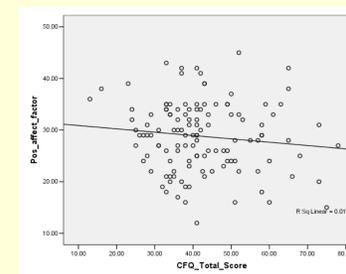
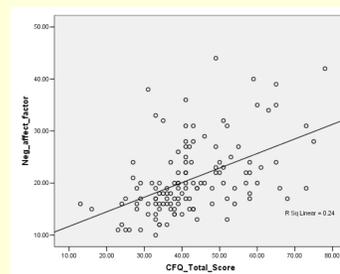
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Sample Questions For CFQ Factors

1. Do you forget why you went from one part of the house to another (memory)
2. Do you read something and find you find you haven't been thinking about it and must read it again? (Distractibility)
3. Do you drop things? (Blunders)
4. Do you forget people's names? (names)

Scatterplots of Affect and CFQ Scores



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