



## Stress and affective experiences: The importance of dark personality features



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### ABSTRACT

Personality has been shown to play an important role in the negative outcomes associated with stress. The purpose of the present study was to examine whether Dark Triad personality features (i.e., psychopathy, narcissism, and Machiavellianism) moderated the associations between stress and affective experiences. This was accomplished using a sample of 193 Israeli community participants who completed measures concerning dark personality features and affective expectations for their vacation prior to checking-into exclusive hotels in a resort city in southern Israel. Follow-up assessments concerning affective experiences and stress during vacation were completed by participants before checking-out. Results showed that psychopathy moderated the associations between stress and affective experiences such that individuals with high levels of psychopathy were more reactive to stress.

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### 1. Introduction

It has become increasingly apparent that stress – both chronic and acute – adversely impacts psychological and physical well-being (e.g., Eckenrode, 1984; Keller et al., 2012; Lantz, House, Mero, & Williams, 2005). A particular area of importance has concerned the stress-response process. More specifically, researchers have argued that understanding the stress-response process may be essential for explaining the detrimental effects that stress has on mental and physical health (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Keller et al., 2012). Support for this argument has been found in studies showing that the extent to which individuals experience stress coupled with how they react – both emotionally and physically – to stressful events leads to negative outcomes (e.g., depression, anger, negative affective experiences; Bolger & Zuckerman, 1995; Braveman, Egerter, & Williams, 2011; Lantz et al., 2005; Marco & Suls, 1993; Smith & Anderson, 1986; Smith & Rhodewalt, 1986).

Although research has clearly documented that some individuals are more likely to experience stress and respond more negatively to stressful situations, the reasons these individuals

are at greater risk for the negative consequences associated with stress remain somewhat unclear. One possible explanation that has been given considerable empirical attention is the importance of personality features (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Korotkov, 2008; Marco & Suls, 1993; Mroczek & Almeida, 2004). Previous research has examined the importance of personality features in the stress process with the results of these studies providing consistent evidence that personality features influence how individuals perceive and respond to stressful situations (e.g., Besser, Zeigler-Hill, Pincus, & Neria, 2013; Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Smith & Anderson, 1986; Smith & Rhodewalt, 1986). For example, studies have found that increased exposure to stressful situations coupled with greater reactivity to those situations may explain, at least in part, why Type A personality leads to coronary heart disease (Smith & Anderson, 1986; Smith & Rhodewalt, 1986) and why neurotic individuals generally perceive situations to be more stressful and are more likely to respond to stress with anger and depression (Bolger & Schilling, 1991). However, it is important to note that reactivity to stress has been found to be much more important than actual exposure to stress (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995). That is, individuals who are highly reactive to stress are at a greater risk for experiencing the negative consequences associated with stress. The goal of the present study is to examine whether the Dark Triad of personality (i.e., psychopathy, narcissism, and Machiavellianism; Paulhus & Williams, 2002) are associated with affective responses to stress.

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Empirical research that has examined the associations between personality features and stress has focused a great deal of attention on the Big Five dimensions of personality (e.g., John & Srivastava, 1999). Studies that have used this model to explore the stress process have found that neuroticism is strongly associated with both stress and negative affect (e.g., David, Green, Martin, & Suls, 1997; Gross, Sutton, & Ketelaar, 1998; Korotkov, 2008; Suls, Green, & Hillis, 1998). In contrast, extraversion, agreeableness, and conscientiousness have been shown to be associated with lower levels of perceived stress and fewer disruptions to life events due to stress (e.g., Ebstrup, Eplow, Pisinger, & Jørgensen, 2011; see Vollrath, 2001, for a review). Taken together, these findings suggest that certain personality features (e.g., neuroticism) seem to exacerbate the stress process, whereas others (e.g., agreeableness) appear to buffer against stress and distress.

Although a great deal is known about the roles that the Big Five dimensions of personality play in the stress process, relatively little is known about the role that other personality features such as the Dark Triad of personality may play in responses to stress. The Dark Triad share a common lack of agreeableness (Paulhus & Williams, 2002) which is a personality feature shown to protect against the experience of stress (Vollrath, 2001). Further, each component of the Dark Triad is characterized by antagonistic behavioral tendencies such as being deceptive, manipulative, and aggressive (Paulhus & Williams, 2002). This suggests the intriguing possibility that Dark Triad personality features may impact how individuals perceive and respond to stress because they lack important features that buffer against stress (i.e., agreeableness) and engage in behaviors that are associated with heightened levels of stress reactions.

### 1.1. Psychopathy

The first component of the Dark Triad is psychopathy. In addition to being disagreeable, individuals with high levels of psychopathy are characterized by a disregard for social norms and values, irresponsibility, dishonesty, and emotional shallowness which puts them at an increased risk to engage in both instrumental (i.e., goal-directed) and reactive (i.e., impulsive, emotion-driven) forms of aggression (Cornell et al., 1996; Frick, Cornell, Barry, Bodin, & Dane, 2003). The idea that psychopathic individuals engage in instrumental aggression is consistent with research showing that psychopathy is associated with deficits in particular forms of emotional reactivity – especially with respect to fear (Fowles, 1988; Lykken, 1995; Patrick, Cuthbert, & Lang, 1994) – due to reduced amygdala function (Blair, 2007). The reason for the link between psychopathy and reactive aggression is less clear but Blair (2010) has recently suggested that this connection may be due to individuals with high levels of psychopathy being highly susceptible to frustration. Frustration refers to an emotional state that occurs when an individual performs an action with the expectation of a particular reward but does not receive the anticipated reward (Berkowitz, 1993). The association between psychopathy and frustration may be explained by two impairments that include disruptions in stimulus-reinforcement learning and reversal learning (e.g., Blair, 2010; Finger et al., 2008). Both learning deficits are known consequences of impairment in the ventromedial prefrontal cortex which is a principle region of concern in psychopathy (Blair, 2010). Taken together, these findings suggest that individuals with high levels of psychopathy may be especially reactive to stressful events that have the potential to provoke frustration.

### 1.2. Narcissism

The second component of the Dark Triad is narcissism. Previous studies have shown that narcissistic individuals are highly reactive

to mundane negative events that have the ability to threaten their grandiose self-views (e.g., failure to achieve a particular goal; Besser & Zeigler-Hill, 2010, 2011; Zeigler-Hill & Besser, 2013; Zeigler-Hill, Myers, & Clark, 2010). In addition, narcissistic individuals are highly sensitive to feeling antagonized by others (Hopwood et al., 2011), more likely to perceive themselves as victims of daily interpersonal transgressions (McCullough, Emmons, Kilpatrick, & Mooney, 2003), and report more acute anxiety symptoms following potentially life-threatening events (e.g., civilians exposed to missile fire; Besser et al., 2013). The heightened reactivity of individuals with narcissistic personality features to stressful events is thought to be due to their self-concepts being grandiose yet vulnerable to threat (Kealy & Rasmussen, 2012; Morf & Rhodewalt, 2001; Pincus & Roche, 2011; Zeigler-Hill & Jordan, 2011). It has been suggested that the heightened reactivity of individuals with narcissistic personality features may extend to other negative events including those that are stressful (e.g., Zeigler-Hill et al., 2010). Narcissistic individuals may be especially reactive to stressful events that have the potential to undermine their sense of control and challenge their beliefs concerning their ability to effectively manage that sort of negative experience.

### 1.3. Machiavellianism

Machiavellianism is the final member of the Dark Triad. Machiavellianism is a personality trait that reflects cynical, manipulative, and amoral behavior (Christie & Geis, 1970). Although Machiavellianism is similar to psychopathy and narcissism in some respects (e.g., disagreeable and antagonistic), Machiavellianism has been shown to differ from the other aspects of the Dark Triad in important ways (e.g., less impulsive; Jones & Paulhus, 2011a) which makes its association with the stress process less clear. For example, individuals with psychopathic and narcissistic personality features tend to be highly reactive to particular types of threat (physical threat and ego-threat, respectively; Jones & Paulhus, 2010, 2011b), whereas Machiavellian individuals tend to be more cautious and deliberate in their behavior (Williams, Nathanson, & Paulhus, 2010). This suggests that although Machiavellian individuals may be just as socially aversive as individuals with high levels of psychopathy and narcissism, the tendency to engage in calculated and cautious behavior may reduce the reactivity of Machiavellian individuals to stressful situations (Jones & Paulhus, 2010).

### 1.4. Overview and predictions

The purpose of the present study was to examine the importance of Dark Triad personality features in the associations between stress and negative outcomes. More specifically, the present study examined whether Dark Triad personality features moderated the association between perceived stress and affect during a relatively positive experience (i.e., going on vacation). This was accomplished using a short-term pre–post study design. In the initial session, participants completed measures concerning their dark personality features and expectations for their vacation. Follow-up assessments took place on the last day of the participant's vacation. These assessments asked participants to report their affective experiences and perceived level of stress during vacation. We expected that individuals with psychopathic and narcissistic personality features would be especially responsive to stress in this context such that they would report fewer positive affective experiences while vacationing when they felt stressed. The rationale for this prediction was that psychopathy and narcissism would exacerbate the stress process leading these individuals to be especially reactive to stress during a generally positive experience. We believed that individuals with psychopathic and narcissistic personality features would exhibit heightened reactivity in this

situation because of their impulsivity (Jones & Paulhus, 2011a) and poor tolerance for frustration (Bettencourt, Talley, Benjamin, & Valentine, 2006; Blair, 2010). That is, individuals generally expect vacationing to be a positive and rewarding experience which may lead individuals with psychopathic or narcissistic personality features to be quite upset when this experience fails to meet their expectations. Our predictions for Machiavellianism were less clear. It is possible that Machiavellianism may also moderate the association between stress and affective experiences because it is similar in some respects to psychopathy and narcissism. However, Machiavellian individuals tend to be far less impulsive and more tolerant of frustration than those with psychopathic or narcissistic personality features (Jones & Paulhus, 2011a). As a result, Machiavellian individuals may be no more or less reactive to stress than other individuals.

## 2. Method

### 2.1. Participants and procedure

Participants were a community sample of 193 adults (96 male, 97 female) who spent a 4-day vacation (Sunday–Wednesday or Wednesday–Sunday) with their spouses and children at exclusive hotels in a resort city located in southern Israel (Eilat). The mean age of the participants was 33.84 years ( $SD = 8.29$ ) and their average number of years of formal education was 15.17 ( $SD = 2.39$ ). Participants were from urban areas across Israel and reported above-average socioeconomic status. Participants volunteered to take part in the study and were not compensated for their participation in any way by the researchers or the participating hotels. The managers of the hotels allowed our research staff to greet guests as they were checking-in at their establishments and ask them if they would be willing to volunteer their time to take part in a study being conducted by faculty and students from the Eilat campus of Ben-Gurion University. Participants completed measures in a private room prior to checking-in (Time 1) and again before checking-out (Time 2). Participants arrived at the hotels in organized groups which allowed research assistants to approach each guest and 87% of those approached agreed to participate. Only one member of each family was allowed to participate (e.g., if a husband agreed to participate, then his wife was not invited). According to the records of the hotels and participant reports, none of the participants experienced any major inconveniences (e.g., prolonged power outage) or unexpected negative events (e.g., illness or injury) during their vacations. All of the questionnaires used in the present study were administered in paper-and-pencil format. The questionnaires were presented in Hebrew after being translated from the original English versions using the back-translation method.

## 3. Measures

### 3.1. Psychopathy

Psychopathy was measured using the Self-Report Psychopathy scale (SRP-III; Paulhus, Neumann, & Hare, in press; Williams, Paulhus, & Hare, 2007). The SRP-III was based on the revised version of the Hare's Psychopathy Checklist (PCL-R; Hare, 2003) and was intended to serve as a measure of psychopathy in non-clinical samples. The version of the SRP-III employed in the current study consists of 34 items based on the factor analysis conducted by Mahmut, Menictas, Stevenson, and Homewood (2011). Participants were asked to indicate their level of agreement with each of 34 statements (e.g., "It's amusing to see other people get

tricked") using scales that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency of the SRP-III was  $\alpha = .77$ .

### 3.2. Narcissism

Narcissism was assessed with the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979). The version of the NPI used in the present study consisted of 37 true–false items (e.g., "I like to be the center of attention") that Morf and Rhodewalt (1993) adapted from Emmons's (1987) factor analysis of the original 54-item instrument. This version of the NPI only includes items with factor loadings higher than .35 (Emmons, 1987) and eliminates most duplicate items. The NPI has been found to possess adequate psychometric properties in previous studies (e.g., Emmons, 1987). The internal consistency for the present study was  $\alpha = .86$ .

### 3.3. Machiavellianism

Machiavellianism was assessed using the Mach-IV (Christie & Geis, 1970). The Mach-IV is a 20-item instrument designed to measure manipulative and deceitful tendencies as well as cynical and immoral beliefs (e.g., "The best way to handle people is to tell them what they want to hear"). Participants were asked to rate their level of agreement with the items of the Mach-IV on scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Mach-IV has been found to possess adequate psychometric properties and it is the most widely used measure of Machiavellianism (McHoskey, Worzel, & Szyarto, 1998). The internal consistency for the Mach-IV was  $\alpha = .59$ .

### 3.4. Positive affective expectations and positive affective experiences

At Time 1, participants rated three statements (i.e., "I expect to enjoy this vacation," "I think this vacation will be fun," and "I will be satisfied with this vacation") that were designed to assess anticipated subjective experiences (i.e., positive affective expectations). These items were adapted from those used in previous studies (i.e., Besser & Priel, 2006; Besser & Shackelford, 2007; Klaaren, Hodges, & Wilson, 1994; Wirtz, Kruger, Scollon, & Diener, 2003). Responses were made using scales that ranged from 1 (*disagree*) to 10 (*agree*). Scores on these items were combined to create a composite score of overall positive affective expectations for each participant. At Time 2, participants completed a set of identical items with the verb tense changed to evaluate their subjective vacation experiences (i.e., "I enjoyed this vacation," "I thought this vacation was fun," and "I was satisfied with this vacation"). Scores on these items were also combined for each participant to create a composite score of overall positive affective experiences. The internal consistency coefficients of .81 and .89 were obtained for positive affective expectations and positive affective experiences, respectively.

### 3.5. Stress

Stress during the vacation was assessed at Time 2 using a single statement designed to evaluate overall subjective experience of stress (i.e., "This vacation was stressful for me"). Participants responded to this item using a scale that ranged from 1 (*disagree*) to 10 (*agree*).

## 4. Results

The means, standard deviations, and intercorrelations for the measures are presented in Table 1. Psychopathy was positively associated with narcissism and Machiavellianism but narcissism

**Table 1**  
Intercorrelations and descriptive statistics.

	1	2	3	4	5	6
1. Psychopathy (Time 1)	–					
2. Narcissism (Time 1)	.28***	–				
3. Machiavellianism (Time 1)	.32***	.04	–			
4. Positive affective expectations (Time 1)	.07	.13	–.01	–		
5. Stress (Time 2)	.17*	.11	.01	–.31***	–	
6. Positive affective experiences (Time 2)	–.14	–.01	–.12	.46***	–.31***	–
Mean	1.82	20.64	2.62	9.44	1.38	9.38
Standard deviation	0.34	6.87	0.39	0.74	0.78	0.89

\*\*  $p < .01$ .

\*  $p < .05$ .

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

and Machiavellianism were not associated with each other. Psychopathy was positively associated with stress. Stress was negatively associated with both positive affective expectations and positive affective experiences which were positively associated with each other. For the individual differences assessed in the present study, men were slightly older ( $t[191] = -2.04, p = .04$ ) and reported higher levels of psychopathy ( $t[182] = -3.64, p < .001$ ) than women. Women reported more positive affective experiences than men ( $t[182] = 2.39, p = .02$ ). It is important to note that the positive affective expectations and experiences reported by participants were generally high so “low” scores on these measures are relative to this high baseline. Similarly, the levels of Dark Triad personality features were not particularly high in the present sample so “high” scores on these measures are relative to this modest baseline.

#### 4.1. Dark triad and positive affective expectations

To determine whether Dark Triad personality features were associated with positive affective expectations, we conducted a hierarchical multiple regression analysis in which positive affective expectations were regressed onto each of the Dark Triad personality traits.<sup>1</sup> On Step 1, the age and sex of each participant were entered as covariates. Age was included because younger participants tended to report more positive affective expectations ( $r = -.23, p = .001$ ) and experiences ( $r = -.20, p = .01$ ). Sex was included because men tended to have higher levels of psychopathy and were older than women, whereas women reported more positive affective experiences than men. On Step 2, the main effect terms for each of the Dark Triad personality traits (i.e., psychopathy, narcissism, and Machiavellianism) were entered. The results of this analysis are presented in Table 2. This analysis revealed a negative association between age and positive affective expectations ( $\beta = -.24, t = -3.30, p = .001$ ) such that younger individuals reported more positive affective expectations for their vacation than older individuals. No significant associations emerged between the Dark Triad and positive affective expectations.

#### 4.2. Dark triad, stress, and positive affective experiences

Moderational analyses were conducted to determine whether Dark Triad personality traits were associated with positive

affective experiences when individuals perceived their vacation to be stressful. This was accomplished by conducting a hierarchical multiple regression analysis in which positive affective experiences at Time 2 were regressed onto each of the Dark Triad personality traits, vacation stress, positive affective expectations at Time 1, age, and sex. We controlled for positive affective expectations at Time 1 in the prediction of positive affective experiences at Time 2 because we wanted to account for the differences between individuals' prior expectations and their actual experiences during a defined period of time (i.e., vacation). The continuous predictors were centered for the purpose of testing interactions (Aiken & West, 1991). For this analysis, the covariates (i.e., positive affective expectations, age, and sex) were entered on Step 1. On Step 2, the main effect terms for the Dark Triad personality traits were entered. On Step 3, the main effect term for vacation stress was entered. Finally on Step 4, the two-way interactions for vacation stress with each component of the Dark Triad were entered. The results of this analysis are presented in Table 2. The regression analysis was followed by simple slopes tests (Aiken & West, 1991) to describe the interaction of continuous variables. These simple slopes tests were conducted using values that were one standard deviation above and below their respective means (e.g., a high level of psychopathy was represented by a value that was one standard deviation above its mean).

On Step 1, main effects emerged for positive affective expectations ( $\beta = .44, t = 6.82, p < .001$ ) and sex ( $\beta = -.16, t = -2.51, p = .01$ ) such that individuals who had positive affective expectations for their vacation or were women reported more positive affective experiences during their vacation. On Step 3, the main effect of vacation stress also emerged ( $\beta = -.22, t = -3.49, p < .001$ ) but this main effect was qualified by its interaction with psychopathy ( $\beta = -.29, t = -4.11, p < .001$ ). The predicted values for this interaction are presented in Fig. 1.<sup>2</sup> Simple slopes tests revealed that the slope of the line representing the association between vacation stress and positive affective experiences was significant for individuals with high levels of psychopathy ( $\beta = -.48, t = -5.59, p < .001, 95\% \text{ CI} [-.74, -.35]$ ) but not for those with low levels of psychopathy ( $\beta = .11, t = 1.09, p = .28, 95\% \text{ CI} [-.11, .37]$ ). Additional simple slopes tests revealed a negative association between psychopathy and positive affective experiences for those with high levels of stress ( $\beta = -.36, t = -3.57, p < .001, 95\% \text{ CI} [-1.45, -.42]$ ) but a positive association for those with low levels of stress ( $\beta = .24, t = 2.38, p = .02, 95\% \text{ CI} [.11, 1.15]$ ). Taken together, these results suggest that individuals with low levels of psychopathy do not appear to be very reactive to stress in this context because they reported moderate levels of positive affective experiences regardless of the amount of

<sup>1</sup> Preliminary analyses included the Big Five personality dimensions (i.e., extraversion, agreeableness, conscientiousness, neuroticism, and openness) as measured by the Ten-Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003). The results of those analyses were similar to what emerged when only dark personality features were included. For example, the psychopathy  $\times$  stress interaction still emerged when predicting positive affective experiences at Time 2 ( $\beta = -.28, t = -3.30, p = .001$ ) but no main effects or interactions involving the Big Five dimensions were significant. As a result, we trimmed the Big Five personality dimensions from the analyses in the interest of parsimony.

<sup>2</sup> We also conducted separate regression analyses to examine the interaction between each feature of the Dark Triad and stress. The results of these separate analyses were similar to those reported in the primary text: psychopathy  $\times$  stress ( $\beta = -.25, t = -4.18, p < .001$ ), narcissism  $\times$  stress ( $\beta = .02, t = 0.36, p = .72$ ), and Machiavellianism  $\times$  stress ( $\beta = -.08, t = -1.21, p = .23$ ).

**Table 2**

Regressions of positive affective expectations on Dark Triad personality traits, age, and sex and positive affective experiences on Dark Triad personality traits, stress, affective expectations, age, and sex.

	Positive affective expectations				
	R <sup>2</sup>	ΔR <sup>2</sup>	B (SE)	β	p
<i>Step 1</i>	.05**	.05**			
Age			-.02 (.01)	-.24	.001
Sex			.05 (.11)	.04	.62
<i>Step 2</i>	.07 <sup>†</sup>	.02			
Psychopathy			-.01 (.18)	-.01	.94
Narcissism			.01 (.01)	.11	.14
Machiavellianism			.03 (.14)	.02	.85
	Positive affective experiences				
	R <sup>2</sup>	ΔR <sup>2</sup>	B (SE)	β	p
<i>Step 1</i>	.25***	.25***			
Age			-.01 (.01)	-.08	.25
Sex			-.29 (.11)	-.16	.01
Positive affective expectations			.53 (.08)	.44	<.001
<i>Step 2</i>	.27***	.02			
Psychopathy			-.29 (.19)	-.11	.13
Narcissism			-.01 (.01)	-.04	.52
Machiavellianism			-.15 (.15)	-.07	.31
<i>Step 3</i>	.32***	.05**			
Stress			-.25 (.07)	-.22	.001
<i>Step 4</i>	.38***	.06***			
Psychopathy × Stress			-1.00 (.24)	-.29	<.001
Narcissism × Stress			.10 (.01)	.05	.43
Machiavellianism × Stress			.20 (.25)	.06	.44

<sup>†</sup>  $p < .05$ .

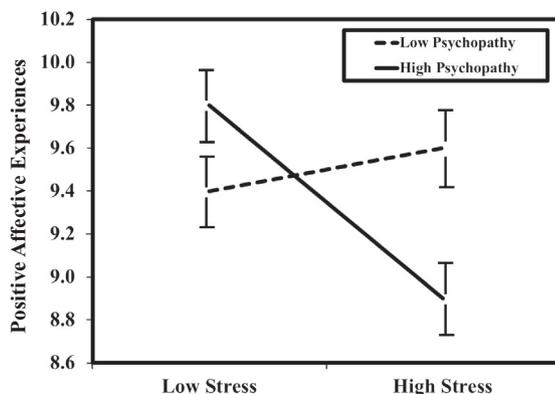
\*\*  $p < .01$ .

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

stress they experienced. In contrast, individuals with high levels of psychopathy appear to be highly reactive to stress in this context such that these individuals reported having fewer positive affective experiences than those with low levels of psychopathy when they experienced high levels of stress but more positive affective experiences than those with low levels of psychopathy when they experienced low levels of stress.

## 5. Discussion

The goal of the present study was to examine whether Dark Triad personality features moderated the association between stress and affective experiences. Consistent with previous research (e.g., Bolger & Zuckerman, 1995; Braveman et al., 2011; Lantz et al., 2005; Marco & Suls, 1993; Smith & Anderson, 1986; Smith &



**Fig. 1.** Predicted values for positive affective experiences illustrating the interaction of psychopathy and perceived stress at values that are one standard deviation above and below their respective means.

Rhodewalt, 1986), perceived stress was associated with more negative outcomes. These findings highlight the importance of considering perceived stress in relatively positive real world situations and are consistent with the results of studies that have examined the role of stress in a similar context (e.g., Besser & Priel, 2006; Besser & Shackelford, 2007).

In partial support of our hypotheses, psychopathic personality features moderated the association between perceived stress and affective experiences. That is, individuals with psychopathic tendencies reported the least positive affective experiences when they perceived their vacations as being stressful. This suggests that individuals with high levels of psychopathy were more reactive to stress in this relatively positive context than were individuals with low levels of psychopathy. Interestingly, individuals with high levels of psychopathy reported more positive affective experiences than those with low levels of psychopathy when perceived levels of stress were low but this pattern reversed when perceived stress was high such that individuals with high levels of psychopathy reported fewer positive affective experiences. Taken together, these findings suggest that individuals with high levels of psychopathy are particularly reactive to stress in this context. This pattern may be explained by the fact that individuals with high levels of psychopathy often lack impulse control (Jones & Paulhus, 2011a) and demonstrate a low tolerance for frustration (Bettencourt et al., 2006; Blair, 2010). For example, individuals with high levels of psychopathy may become more easily irritated than others when they experience poor service at the hotel resort or are unable to master a leisure activity or game. This explanation is supported by a line of research that has shown that individuals with high levels of psychopathy engage in reactive aggression which is triggered by a frustrating event and often involves unplanned, emotional attacks on the perceived source of frustration (Berkowitz, 1993). Although relatively few studies have examined whether this susceptibility to frustration and impulsivity puts these individuals at risk for negative consequences other than reactive aggression, the existing findings suggest that this may be a viable possibility (e.g., Blair, 2010). For example, Jones and Paulhus (2011a) found that individuals with psychopathic tendencies engaged in high levels of dysfunctional impulsivity which put them at a greater risk for negative outcomes such as poor decision making (e.g., Brunas-Wagstaff, Bergquist, Richardson, & Connor, 1995). Studies using the Ultimatum Game (i.e., a 2-player game in which one player [the Proposer] makes a recommendation about how they should split a sum of money [50-50, 60-40, 70-30, etc.] and the other player [the Responder] decides whether to accept the proposed split or reject the split so that both players receive nothing) have shown that individuals with psychopathic tendencies are more likely than others to reject relatively small unfair offers (i.e., less than 20–30% of the total) which is thought to be due to an inability to regulate their frustration during this task (e.g., Koenigs, Kruepke, & Newman, 2010; Pillutla & Murnighan, 1996). Further research is needed to gain a better understanding of the types of situations that elicit frustration among individuals with high levels of psychopathy as well as the nature of their responses to frustration across these situations.

Contrary to our predictions, narcissistic personality features failed to moderate the associations between perceived stress and affective experiences. That is, individuals with high levels of narcissism were no more or less reactive to stress in this context than individuals with low levels of narcissism. This pattern is somewhat surprising given that the feelings of entitlement (e.g., Brown, Budzek, & Tamborski, 2009) and impulsivity (e.g., Vazire & Funder, 2006) that often characterize narcissistic individuals would seem to make them especially prone to emotional reactions in the wake of stressful situations. The most likely explanation for this pattern is that the minor inconveniences encountered during

these vacation experiences (e.g., slow service at a restaurant) may not have had the capacity to threaten the grandiose yet vulnerable self-concepts of narcissistic individuals. That is, we believe that the minor inconveniences encountered during these relatively positive experiences may not be particularly meaningful to individuals with narcissistic tendencies because these inconveniences likely do not undermine their grandiose self-perceptions and feelings of control that often result in a marked dysregulation of self and affective processes (Pincus & Lukowitsky, 2010). Future research is needed to further assess the types of events that elicit heightened reactivity from individuals with narcissistic tendencies.

The present study highlights the importance of considering psychopathic personality features in the connection between stress and affective experiences in a relatively positive real world situation. Psychopathy is associated with relatively poor interpersonal relationship functioning (e.g., Jones & Paulhus, 2011a; Williams & Paulhus, 2004). The poor interpersonal styles of individuals with high levels of psychopathy is due, at least in part, to their impulsive behavior which is found to be problematic even for individuals with subclinical levels of psychopathy (Williams & Paulhus, 2004). This has important implications for service industries because research suggests that customers who are aggressive and uncivil (i.e., deviant behavior that violates norms for mutual respect) toward employees has adverse effects (e.g., Grandey, Dickter, & Sin, 2004; van Jaarsveld, Walker, & Skarlicki, 2010). For example, Grandey et al. (2004) found that employees who encountered aggressive customers experienced more stress and faster burnout. Results from a study conducted by van Jaarsveld et al. (2010) revealed that interactions with uncivil customers led to increased emotional exhaustion and ultimately reciprocation of uncivil behaviors. Taken together, these findings suggest that it could be helpful for service industries to be aware of the fact that customers with high levels of psychopathy may become more easily frustrated with employees when they experience minor inconveniences that may sometimes be beyond the control of the employees (e.g., slow service due to an under staffed kitchen). This is helpful because it allows individuals working in service industries to be more aware of when these situations occur and to prepare their employees by limiting their interactions with these customers and providing employees with relief such as longer and more frequent breaks during shifts.

The present study had a number of strengths (e.g., community sample, real life situations) but it is important to acknowledge some of the potential limitations. The first limitation of the present study is that it relied exclusively on self-report measures. This presents the possibility that our findings may have been influenced by distorted responses (e.g., socially desirable responding). For example, some individuals may have been reluctant to report negative experiences regarding their vacation. Future studies should adopt more direct observations of individuals' behaviors, affect, stress, and involvement in activities while they are on vacation. The second limitation is that the sample consisted of married individuals from urban areas in Israel which may limit the generalizability of these results. The extent to which the present results would replicate in a more diverse sample (e.g., individuals with a different racial/ethnic background, unmarried individuals, individuals who are not wealthy enough to vacation at this sort of resort) is an important question for future research. The third limitation is that the present study assessed stress using a single-item measure. It is important for future research to use a more comprehensive measure of stress to replicate the present findings. A related limitation is that the generally high scores for our measures of positive affective expectations and experiences raise the possibility of ceiling effects. This suggests that the "low" scores that we observed for positive affective expectations and experiences were only low in relation to this high baseline. This is not terribly surprising consid-

ering that vacations are considered to be generally positive experiences. Conversely, the relatively low scores that were found for the Dart Triad and stress raise the possibility of floor effects. This is important to note because it suggests that our participants did not generally report high levels of Dark Triad personality features nor did they experience extremely high levels of stress during their vacations. Future research should attempt to extend these results to individuals with more extreme manifestations of these personality features (e.g., individuals who meet the diagnostic criteria for antisocial personality disorder).

Despite its limitations, the present study sheds light on the importance of considering dark personality features in the associations between stress and negative affective experiences. The results of the present study found that psychopathic personality features moderated the association between stress and affective experiences such that individuals with high levels of psychopathy were more reactive to stress in a relatively positive situation. This suggests the possibility that individuals with psychopathic personality features may be vulnerable to negative consequences in situations where there is a high risk for frustration even though vacations are generally assumed to be relatively positive experiences. These findings extend our understanding of the link between stress and negative outcomes as well as provide support for the possibility that frustration may be important for understanding the negative consequences associated with psychopathy.

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## References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control*. Philadelphia, PA: Temple University Press.
- Besser, A., & Priel, B. (2006). Models of attachment, confirmation of positive affective expectations, and satisfaction with vacation activities: A pre-post panel design study of leisure. *Personality and Individual Differences*, 41, 1055–1065.
- Besser, A., & Shackelford, T. K. (2007). Mediation of the effects of the big five personality dimensions on negative mood and confirmed affective expectations by perceived situational stress: A quasi-field study of vacationers. *Personality and Individual Differences*, 42, 1333–1346.
- Besser, A., & Zeigler-Hill, V. (2010). The influence of pathological narcissism on emotional and motivational responses to negative events: The roles of visibility and concern about humiliation. *Journal of Research in Personality*, 44, 520–534.
- Besser, A., & Zeigler-Hill, V. (2011). Pathological forms of narcissism and perceived stress during the transition to the university: The mediating role of humor styles. *International Journal of Stress Management*, 18, 197–221.
- Besser, A., Zeigler-Hill, V., Pincus, A. L., & Neria, Y. (2013). Pathological narcissism and acute anxiety symptoms: A study of Israeli civilians exposed to war trauma. *Psychiatry: Interpersonal and Biological Processes*, 76, 381–397.
- Bettencourt, B. A., Talley, A., Benjamin, A. J., & Valentine, J. (2006). Personality and aggressive behavior under provoking and neutral conditions: A meta-analytic review. *Psychological Bulletin*, 132, 751–777.
- Blair, R. J. R. (2007). Dysfunctions of medial and lateral orbitofrontal cortex in psychopathy. *Annals of the New York Academy of Sciences*, 1121, 461–479.
- Blair, R. J. R. (2010). Psychopathy, frustration, and reactive aggression: The role of ventromedial prefrontal cortex. *British Journal of Psychology*, 101, 383–399.
- Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59, 355–386.
- Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, 69, 890–902.
- Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: Coming of age. *Annual Review of Public Health*, 32, 381–398.
- Brown, R. P., Budzek, K., & Tamborski, M. (2009). On the meaning and measure of narcissism. *Personality and Social Psychology Bulletin*, 35, 951–964.

- Brunas-Wagstaff, J., Bergquist, A., Richardson, P., & Connor, A. (1995). The relationships between functional and dysfunctional impulsivity and the Eysenck personality questionnaire. *Personality and Individual Differences, 18*, 681–683.
- Christie, R., & Geis, R. L. (1970). *Studies in Machiavellianism*. New York, NY: Academic Press.
- Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., & Pine, D. (1996). Psychopathy in instrumental and reactive violent offenders. *Journal of Consulting and Clinical Psychology, 64*, 783–790.
- David, J. P., Green, P. J., Martin, R., & Suls, J. (1997). Differential roles of neuroticism, extraversion, and event desirability for mood in daily life: An integrative model of top-down and bottom-up influences. *Journal of Personality and Social Psychology, 73*, 149–159.
- Ebstrup, J. F., Eplöv, L. F., Pisinger, C., & Jørgensen, T. (2011). Association between the Five Factor personality traits and perceived stress: Is the effect mediated by general self-efficacy? *Anxiety, Stress & Coping, 24*, 407–419.
- Eckenrode, J. (1984). Impact of chronic and acute stressors on daily reports of mood. *Journal of Personality and Social Psychology, 46*, 907–918.
- Emmons, R. A. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology, 52*, 11–17.
- Finger, E. C., Marsh, A. A., Mitchell, D. G. V., Reid, M. E., Sims, C., Budhani, S., et al. (2008). Abnormal ventromedial prefrontal cortex function in children with psychopathic traits during reversal learning. *Archives of General Psychiatry, 65*, 586–594.
- Fowles, D. C. (1988). Psychophysiology and psychopathy: A motivational approach. *Psychophysiology, 25*, 373–391.
- Frick, P. J., Cornell, A. H., Barry, C. T., Bodin, S. D., & Dane, H. E. (2003). Callous-unemotional traits and conduct problems in the prediction of conduct problem severity, aggression, and self-report delinquency. *Journal of Abnormal Child Psychology, 31*, 457–470.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. Jr., (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.
- Grandey, A. A., Dickter, D. N., & Sin, H. P. (2004). The customer is not always right: Customer aggression and emotion regulation of service employees. *Journal of Organizational Behavior, 25*, 397–418.
- Gross, J. J., Sutton, S. K., & Ketelaar, T. (1998). Relations between affect and personality: Support for the affect-level and affective-reactivity views. *Personality and Social Psychology Bulletin, 24*, 279–288.
- Hare, R. D. (2003). *The hare psychopathy checklist-revised (PCL-R)* (2nd ed.). Toronto, Ontario, Canada: Multi-Health Systems.
- Hopwood, C. J., Ansell, E. B., Pincus, A. L., Wright, A. G., Lukowitsky, M. R., & Roche, M. J. (2011). The circumplex structure of interpersonal sensitivities. *Journal of Personality, 79*, 707–740.
- John, O. P., & Srivastava, S. (1999). The Big Five Trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York, NY: Guilford Press.
- Jones, D. N., & Paulhus, D. L. (2010). Different provocations provoke aggression in psychopaths and narcissists. *Social Psychological and Personality Science, 1*, 12–18.
- Jones, D. N., & Paulhus, D. L. (2011a). The role of impulsivity in the Dark Triad of personality. *Personality and Individual Differences, 51*, 679–682.
- Jones, D. N., & Paulhus, D. L. (2011b). Differentiating the Dark Triad within the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology* (pp. 249–269). New York, NY: Guilford.
- Kealy, D., & Rasmussen, B. (2012). Veiled and vulnerable: The other side of grandiose narcissism. *Clinical Social Work, 40*, 356–366.
- Keller, A., Litzelman, K., Wisk, L. E., Maddox, T., Cheng, E., Creswell, P. D., et al. (2012). Does the perception that stress affects health matter? The association with health and mortality. *Health Psychology, 31*, 677–684.
- Klaaren, K. J., Hodges, S. D., & Wilson, T. D. (1994). The role of affective expectations in subjective experience and decision-making. *Social Cognition, 12*, 77–101.
- Koenigs, M., Kruepke, M., & Newman, J. P. (2010). Economic decision-making in psychopathy: A comparison with ventromedial prefrontal lesion patients. *Neuropsychologia, 48*, 2198–2204.
- Korotkov, D. (2008). Does personality moderate the relationship between stress and health behavior? Expanding the nomological network of the five-factor model. *Journal of Research in Personality, 42*, 1418–1426.
- Lantz, P. M., House, J. S., Mero, R. P., & Williams, D. R. (2005). Stress, life events, and socioeconomic disparities in health: Results from the Americans' Changing Lives Study. *Journal of Health and Social Behavior, 46*, 274–288.
- Lykken, D. T. (1995). *The antisocial personalities*. Hillsdale, NJ: Erlbaum.
- Mahmut, M. K., Menictas, C., Stevenson, R. J., & Homewood, J. (2011). Validating the factor structure of the Self-Report Psychopathy Scale in a community sample. *Psychological Assessment, 23*, 670–678.
- Marco, C. A., & Suls, J. (1993). Daily stress and the trajectory of mood: Spillover, response assimilation, contrast, and chronic negative affectivity. *Journal of Personality and Social Psychology, 64*, 1053–1063.
- McCullough, M. E., Emmons, R. A., Kilpatrick, S. D., & Mooney, C. N. (2003). Narcissists as "victims": The role of narcissism in the perception of transgressions. *Personality and Social Psychology Bulletin, 29*, 885–893.
- McHoskey, J. W., Worzel, W., & Szyarto, C. (1998). Machiavellianism and psychopathy. *Journal of Personality and Social Psychology, 74*, 192–210.
- Morf, C. C., & Rhodewalt, F. (1993). Narcissism and self-evaluation maintenance: Explorations in object relations. *Personality and Social Psychology Bulletin, 19*, 668–676.
- Morf, C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry, 12*, 177–196.
- Mroczek, D. K., & Almeida, D. M. (2004). The effect of daily stress, personality, and age on daily negative affect. *Journal of Personality, 72*, 355–378.
- Patrick, C. J., Cuthbert, B. N., & Lang, P. J. (1994). Emotion in the criminal psychopath: Fear image processing. *Journal of Abnormal Psychology, 103*, 523–534.
- Paulhus, D. L., Neumann, C. S., & Hare, R. D. (2014). *Manual for the self-report psychopathy scale* (4th ed.). Toronto, ON, Canada: Multi-Health Systems (in press).
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36*, 556–563.
- Pillutla, M. M., & Murnighan, J. K. (1996). Unfairness, anger, and spite: Emotional rejections of unfair offers. *Organizational Behavior and Human Decision Processes, 68*, 208–224.
- Pincus, A. L., & Lukowitsky, M. R. (2010). Pathological narcissism and narcissistic personality disorder. *Annual Review of Clinical Psychology, 6*, 421–446.
- Pincus, A. L., & Roche, M. J. (2011). Narcissistic grandiosity and narcissistic vulnerability. In W. K. Campbell & J. D. Miller (Eds.), *Handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatment* (pp. 31–40). Hoboken, NJ: Wiley.
- Raskin, R. N., & Hall, C. S. (1979). Narcissistic personality inventory. *Psychological Reports, 45*, 590.
- Smith, T. W., & Anderson, N. B. (1986). Models of personality and disease: An interactional approach to Type A behavior and cardiovascular risk. *Journal of Personality and Social Psychology, 50*, 1166–1173.
- Smith, T. W., & Rhodewalt, F. (1986). On states, traits, and processes: A transactional alternative to the individual difference assumptions in Type A behavior and physiological reactivity. *Journal of Research in Personality, 20*, 229–251.
- Suls, J., Green, P., & Hillis, S. (1998). Emotional reactivity to everyday problems, affective inertia, and neuroticism. *Personality and Social Psychology Bulletin, 24*, 127–136.
- van Jaarsveld, D. D., Walker, D. D., & Skarlicki, D. P. (2010). The role of job demands and emotional exhaustion in the relationship between customer and employee incivility. *Journal of Management, 36*, 1486–1504.
- Vazire, S., & Funder, D. C. (2006). Impulsivity and the self-defeating behavior of narcissists. *Personality and Social Psychology Review, 10*, 154–165.
- Vollrath, M. (2001). Personality and stress. *Scandinavian Journal of Psychology, 42*, 335–347.
- Williams, K. M., Nathanson, C., & Paulhus, D. L. (2010). Identifying and profiling scholastic cheaters: Their personality, cognitive ability, and motivation. *Journal of Experimental Psychology: Applied, 16*, 293–307.
- Williams, K. M., & Paulhus, D. L. (2004). Factor structure of the Self-Report Psychopathy Scale (SRP-II) in non-forensic samples. *Personality and Individual Differences, 37*, 765–778.
- Williams, K. M., Paulhus, D. L., & Hare, R. D. (2007). Capturing the four-factor structure of psychopathy in college students via self-report. *Journal of Personality Assessment, 88*, 205–219.
- Wirtz, D., Kruger, J., Scollon, C. N., & Diener, E. (2003). What to do on spring break? Predicting future choice based on online versus recalled affect. *Psychological Science, 14*, 520–524.
- Zeigler-Hill, V., & Besser, A. (2013). A glimpse behind the mask: Facets of narcissism and feelings of self-worth. *Journal of Personality Assessment, 95*, 249–260.
- Zeigler-Hill, V., & Jordan, C. H. (2011). Behind the mask: Narcissism and implicit self-esteem. In W. K. Campbell & J. Miller (Eds.), *Handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatment* (pp. 101–115). Hoboken, NJ: Wiley.
- Zeigler-Hill, V., Myers, E. M., & Clark, C. B. (2010). Narcissism and self-esteem reactivity: The role of negative achievement events. *Journal of Research in Personality, 44*, 285–292.