Abstract

The Dark Triad personality traits have previously been linked with dysfunctional types of procrastination (i.e., delaying of certain tasks). From an evolutionary perspective, procrastination is recognised for facilitating a fast life history strategy. In the present study we investigated links between active and passive procrastination and the extended Dark Tetrad personality traits (psychopathy, Machiavellianism, narcissism, sadism). Participants ($N = 357$) were invited via Prolific data collection platform and Survey Circle research sites to participate in an online survey exploring personality and procrastination. Path analyses revealed that all Dark Tetrad traits positively predicted several aspects of active procrastination only. Narcissism emerged as the only negative predictor of passive procrastination. Rather than linking these traits with dysfunctional procrastination types only, our results highlight the importance of considering the Dark Tetrad in relation to functional forms of procrastination, which may be more beneficial for facilitating a fast life history strategy.

Key words: *Active procrastination; passive procrastination; Life History Theory, Dark Tetrad traits*

1. Introduction

Applying evolutionary frameworks to individual differences in personality continues to attract growing interest amongst scholars. One area that has received particular interest is the utilisation of Life History Theory to form predictions about higher order personality traits (Jonason et al., 2017). Life History Theory explains differences in behavioural strategies employed using a fast and slow continuum and is used to explain trade-offs in optimising survival and reproduction (Nettle & Frankenhuis, 2019) in response to particular environmental conditions. Individuals employing a fast life history strategy (LHS) maximise immediate fitness at the expense of optimising future fitness. Whereas individuals employing a slow LHS maximise future over current fitness. Where environmental conditions are risky and unpredictable (e.g., low parental care, environments where there is poor health etc), evolutionary speaking, investing in one's present fitness is the optimal strategy. Various behavioural strategies accommodate a fast LHS, including short-term and promiscuous mating, (Mogilski et al., 2020) low parental investment, (de Baca & Ellis., 2017) aggressiveness and

exploitation, (Hengartner, 2017), early pubertal development (Belsky, 2012) and procrastination tendencies (Bin-Bin Chen & Qu, 2017). Life History Theory has been useful for forming predictions amongst the Dark Tetrad personality traits (psychopathy, Machiavellianism, narcissism, sadism), which are a cluster of traits that are largely associated with employing a fast LHS.

Dark Tetrad psychopathy refers to individuals who are superficially charming, unemotional, who lack guilt and remorse (Lyons & Hughes, 2015). Narcissism is characterised by superiority, self-entitlement, grandiosity, and leadership qualities. Individuals high in Machiavellianism are recognised as strategic manipulators who are distrustful and cynical in nature (Jonason et al., 2013). Everyday sadism is the most recent addition to the original dark trio and refers to individuals who experience enjoyment from observing both physical and psychological suffering of others (Tsoukas & March, 2018). Although distinct, all three traits share characteristics such as callousness, (Paulhus, Curtis & Jones, 2018) low agreeableness and low honesty-humility (Lee & Ashton, 2014). Although these traits are largely associated with a fast LHS, each trait demonstrates its own individuality in relation to fast and slow strategies. Although a plethora of research exists in relation to fast LHS amongst these dark personality traits in relation to parental investment, pubertal development, exploitation and aggression, research is scarce in relation to procrastination.

As procrastination involves the delaying of certain tasks in favour of tasks which bring more immediate benefits, it is not surprising that procrastination is suggested to be adaptive for individuals enacting a fast LHS (Bin-Bin Chen & Qu, 2017). Traditionally, procrastination is recognised as being dysfunctional in nature as the delaying of tasks often results in poor time management, missed deadlines, reduced outcome quality and is related to poor self-control, low conscientiousness, poor educational grades and poor self-regulatory behaviours (Lyons & Rice, 2014). Although dysfunctional in the traditional sense, from an evolutionary perspective, procrastination is nevertheless considered adaptive in facilitating a fast LHS (Lyons & Rice, 2014). More recently however, a different form of procrastination has been identified (Choi & Moran, 2009). Active procrastination is identified as being a form of intentional delay and is considered adaptive, often providing positive results, such as the ability to successfully meet deadlines, produce desired outcomes, with active procrastinators preferring

to work under time pressure, whilst still producing satisfactory outcomes (Choi & Moran, 2009). Such intentional delaying of tasks is argued to function in ways that regulate individual motivations and the prioritising of workloads (Sanecka, 2020). Although research exists on the relations between psychopathy, Machiavellianism, narcissism and the traditional dysfunctional forms of procrastination (Lyons & Rice, 2014), the findings reveal weak links only. As individuals high in Dark Tetrad traits are adept at manipulating others, accumulating resources (Jonason & Lavertu, 2017), and are often associated with successful leadership qualities (Jones & Paulhus, 2017), intentionally delaying certain tasks to accommodate such goals requires motivational planning and flexible thinking that may be more suggestive of active procrastination. This would certainly be more adaptive in risky and unpredictable environments, compared to the traditional forms of procrastination. It is therefore possible that stronger links may emerge between the Dark Tetrad traits and active procrastination, particularly amongst traits more strongly linked with a fast LHS. Apart from Sanecka (2020), who explored active procrastination in relation to psychopathy only, we are not aware of any research that has investigated this functional form of procrastination across the Dark Tetrad personality traits.

The present study

We therefore aimed to bridge this gap by exploring links between active procrastination and the Dark Tetrad personality traits to account for Machiavellianism, narcissism and especially the latest arrival of everyday sadism. We explored active procrastination across four dimensions such as intentional delay, outcome satisfaction, time pressure preference and the ability to meet deadlines, devised by Choi & Moran (2009). In line with Sanecka (2020), we expected psychopathy to emerge as a positive predictor of intentional procrastination and we further expected Machiavellianism and narcissism to emerge as positive predictors of intentional procrastination. As less is known about sadism in relation to life history strategies and its lower-level characteristics, we kept more of an open mind in relation to sadism and active procrastination. We also included a traditional measure of procrastination. Passive procrastination refers to people who unintentionally delay tasks, despite having good intentions to complete them and has been linked with low self-esteem, increased stress (Habelrih & Hicks, 2015) and lower educational grades (Gray, 2017). As narcissistic individuals exert additional efforts in

impression management (Bastian, 2019), we expected narcissism to emerge as a negative predictor of passive procrastination.

2. Method

2.1 Participants and Procedure

This study received ethical approval from Sheffield Hallam University's psychological research ethics committee. Participants ($N= 357$; 216, men, 141 women; $M_{Age} = 28.94$, SD $= 11.06$) were recruited via Prolifc data collection and Survey Circle research sites to take part in an online survey exploring personality and procrastination. Page one of the survey included participant information and required all participants to provide online consent before accessing the survey. Participants were fully debriefed at the end of the study.

2.2 Procrastination measures

Active procrastination was measured using the Active Procrastination Scale (APS; Choi & Moran, 2009). This 16-item scale measures participants' agreements on statements across four dimensions: Outcome satisfaction. For example, "I don't do well if I have to rush through a task" (Cronbach's α = .83). Time Pressure: "It's a pain for me to race against deadlines". Intentional Procrastination: (eg, "to use my time more efficiently, I deliberately postpone tasks". Ability to meet deadlines: "I often fail to accomplish goals I set myself". Participants rate each statement using a 7-point Likert scale (1=not at all true to 7=very true). Higher scores represent higher levels of active procrastination. Items were summed to create total indexes for each dimension. This scale has previously demonstrated reliable internal consistency; Cronbach's α = .82 (Sanecka, 2020).

Passive procrastination was measured using the six item Unintentional Procrastination Scale (UPS: Fernie et al., 2017). Using a 7-point Likert scale, participants rate their agreement with each statement. For example, "I intend to get things done, but sometimes this just doesn't happen". Higher scores are representative of higher levels of passive procrastination. Items were summed to create a total

index of passive procrastination. The scale has previously shown a reliable internal consistency; Cronbach's α = .82 (Wessel et al., 2019).

2.3. Personality Measures

Sadism was measured using the 10-item self-report Short Sadistic Impulse Scale (SSIS; Omeara, Aisling, Davies, & Hammond, Sean, 2011). Using a 5-point (1=totally disagree to 5=totally agree) Likert scale, participants rate their agreement with each statement. For example, "Hurting people would be exciting" and "I have hurt people for my own enjoyment". Items were summed to create a total index for sadism, where higher scores represent increased levels of sadism. This scale has previously presented reliable internal consistency Cronbach's α = .86 (Hughes & Samuels, 2021).

Psychopathy, Machiavellianism, and narcissism were measured using the 27-item Short Dark Triad (SD3; Jones & Paulhus, 2014). Using a 5-item Likert scale, participants rated their agreement with each statement relating to the different traits. Psychopathy: "I like to get revenge on authorities" Cronbach's α = .69. Narcissism: "I know that I am special because everyone keeps telling me so" Cronbach's α = .69). Machiavellianism: "Make sure your plans benefit you and not others". Items were summed to create total indexes for each trait, with higher scores representing increased levels of each trait. This scale has previously demonstrated reliable internal consistency. Psychopathy: Cronbach's α = 0.75; narcissism; Cronbach's α = 0.69. Machiavellianism; Cronbach's α = 0.74 (Hughes & Samuels, 2021).

3. Results

Descriptive statistics, correlations and reliability estimates are presented in Table 1. To explore links between the Dark Tetrad traits and procrastination variables, we conducted multiple path analyses using SPSS AMOS to reduce any probabilities of making type 1 errors (Schumacker & Lomaz, 2004). The Dark Tetrad traits were entered as exogenous variables, and passive procrastination and the four facets of active procrastination were entered as endogenous variables. Indices revealed a model fit of X^2 (1) = 3.27, p = 0.071, RMSEA = 0.08, NFI = .98, CFI = .98, TLI = .97. To avoid producing potentially unmeaningful links when these personality traits are investigated at the residual level only, we explored

links at both residual and individual levels (Russel & King, 2016). Direct pathways between traits and active procrastination are reported in Table 2 and direct pathways between traits and passive procrastination are reported in Table 3. At the individual level, all traits positively predicted intentional procrastination. Narcissism positively predicted outcome satisfaction and negatively predicted passive procrastination at both the residual and individual level and positively predicted failure to meet deadlines at the residual level. Whereas psychopathy, Machiavellianism, and sadism negatively predicted failure to meet deadlines. We compared models based on gender using the model comparison function in AMOS, revealing that the Dark Tetrad traits were operating similarly in men and women across active and passive procrastination types (X^2 (23) = 21.44, p = 0.765).

Table 1. Descriptive statistics, Spearman's correlations and Cronbach Alphas for study variables

	variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	Psychopathy	17.78	5.66	(.77)								
2.	Machiavellianism	29.11	5.57	0.44**	(.78)							
3.	Narcissism	23.52	5.21	0.37**	0.26**	(.71)						
4.	Sadism	17.35	6.77	0.67**	0.43**	0.23*	(.85)					
5.	Intentional procrastination	12.81	3.03	0.25**	0.31**	0.21**	0.19**	(.68)				
6.	Meeting deadlines	12.56	3.78	- 0.24**	- 0.18*	0.04	- 0.18**	- 0.25**	(.79)			
7.	Outcome satisfaction	19.27	3.41	- 0.03	- 0.10*	0.13*	- 0.07	- 0.04	0.25*	(.68)		
8.	Time pressure preferences	19.32	3.57	- 0.15*	- 0.12**	0.15*	- 0.11	- 0.06	0.43**	0.80	(.83)	
9.	Passive procrastination	18.94	5.30	0.22*	0.18*	- 0.09	0.18**	0.29**	- 0.75**	0.63**	- 0.34**	(.86)

Note: Reliability estimates are reported in parentheses, *p < 0.05, **p < 0.001, two-tailed

Table 2. Standardised regression weights for direct pathways between traits and active procrastination

Parameter estimates	Residual model	Individual model
Psychopathy ➔ intentional procrastination	0.12	0.25*
Machiavellianism ➔ intentional procrastination	0.23*	0.31*
Narcissism ➔ intentional procrastination	0.11	0.21*
Sadism ➔ intentional procrastination	- 0.02	0.19*
Psychopathy ➔ failure to meet deadlines	- 0.23*	- 0.19*
Machiavellianism ➔ failure to meet deadlines	- 0.06	- 0.11*
Narcissism ➔ failure to meet deadlines	0.18*	0.09
Sadism ➔ failure to meet deadlines	- 0.01	- 0.14*
Psychopathy ➔ poor outcome satisfaction	0.06	0.03
Machiavellianism ➔ poor outcome satisfaction	- 0.10	- 0.07
Narcissism ➔ poor outcome satisfaction	0.13*	0.12*
Sadism ➔ poor outcome satisfaction	- 0.06	- 0.04
Psychopathy ➔ time pressure intolerance	- 0.15*	- 0.08
Machiavellianism ➔ time pressure intolerance	- 0.02	- 0.03
Narcissism ➔ time pressure intolerance	0.11*	0.06
Sadism ➔ time pressure intolerance	0.06	- 0.03

Note: * $p < 0.05$, two-tailed

Table 3: Standardised regression weights for direct pathways between traits and passive procrastination

Parameter estimates	Residual model	Individual model
Psychopathy ➔ passive procrastination	0.03	0.01
Machiavellianism ➔ passive procrastination	0.02	0.02
Narcissism ➔ passive procrastination	- 0.11*	- 0.10*
Sadism ➔ passive procrastination	0.03	0.03

Note: * $p < .05$, two-tailed

4. Discussion

To date the existing literature shows links between psychopathy, Machiavellianism, narcissism and dysfunctional forms of procrastination only. In the current study, we were interested in investigating links between a functional form of procrastination (active procrastination) and the Dark Tetrad personality traits, following recent research showing positive relations between psychopathy and active procrastination. We therefore investigated links between active procrastination and the Dark Tetrad traits to determine whether such functionality can be observed in Machiavellianism, narcissism and sadism also. Our results show that all traits positively predicted active procrastination only. Machiavellianism and psychopathy emerged as the strongest predictors of intentional procrastination.

Both traits are associated with increased levels of superficial charm (Kavish et al., 2019) and flexible decision making (Bereckzie, 2015) and Machiavellianism, in particular is, associated with heightened levels of longer-term planning. Purposely delaying certain tasks to achieve goals and accommodate such flexible decision making may therefore be beneficial for ensuring positive outcomes for these strategic manipulators, particularly in risky and unpredictable environments.

We are not aware of previous research on either functional or dysfunctional forms of procrastination and sadism. Furthermore, the current findings on sadism and LHS are mixed, with some researchers arguing that sadism reflects a fast LHS, whilst others argue that the core features of sadism are not sufficient to indicate a fast LHS (Davis et al, 2019). In the current study we found that sadism positively predicted intentional procrastination and was associated with the ability to meet deadlines. We found no evidence to suggest links between sadism and passive procrastination. Our findings provide evidence suggesting that sadism links with a functional type of procrastination only, in line with its fellow Dark Tetrad traits, which could also facilitate a fast LHS.

All traits apart from narcissism were associated with the ability to successfully meet deadlines. Compared to passive procrastinators, who rely on emotional and avoidance strategies, active procrastinators rely more heavily on task-oriented coping strategies under stress (Chu & Choi, 2005). Relatedly, the Dark Tetrad traits are generally less reliant on emotions (Scavone, 2017), therefore allowing for increased task-focused coping strategies. However, particular facets of narcissism such as grandiose and vulnerable narcissism are positively related to heightened negative emotions related to perceived failure (Derry et al., 2020), possibly providing one explanation for why narcissism emerged as the only positive predictor of failure to meet deadlines in the current sample. Additionally, narcissism was the only trait to positively predict poor outcome satisfaction, which may reflect the vulnerable aspects of the narcissists lowered self-esteem (Derry et al., 2020).

Psychopathy, narcissism and Machiavellianism revealed non-significant links with passive procrastination. Passive procrastinators unintentionally delay tasks, although they do have good intentions to complete them. Perhaps this lack of relations can be explained by the idea that the Dark Tetrad traits are typically devoid of good intentions. Interestingly, narcissism was the only trait to

emerge as a significant negative predictor of passive procrastination, which may be more suggestive of the authoritative/leadership elements of narcissism. This is because this facet is recognised as the more successful component of narcissism and increased self-esteem and is also associated with successful goal achievements (Lyons & Rice, 2014). Therefore, it is not surprising that this successful element of narcissism would negatively relate to a form of procrastination associated with avoidance and fears of failure. Furthermore, procrastination may be more beneficial for narcissistic individuals when promoting short-term mating aspects of a fast LHS, rather than for promoting social networks and successful leadership qualities (Manson, 2020). Future research should therefore explore the multi-faceted dimensions of narcissism in relation to active and passive procrastination.

Our results show that all Dark Tetrad traits were operating similarly in men and women in the context of both passive and active procrastination. This finding contrasts with previous research showing higher levels of dysfunctional procrastination in female compared to male psychopathy (Lyons & Rice, 2014). As dysfunctional procrastination is linked with lower educational and financial status (Lyons & Rice, 2014), whereas functional procrastination is linked with heightened financial success, active procrastination may be equally beneficial in men for signalling status and wealth.

Limitations and future research

There are several limitations of our study that should be discussed. First, we measured Psychopathy, narcissism and Machiavellianism using a short personality measure (SD3), which does not allow for exploration of the different facets of psychopathy and narcissism. However, our main aim for the current study was to firstly determine whether links could be established amongst these traits and active procrastination. Now we have obtained these results, future research should investigate links using longer personality measures to account for the different facets, particularly as each facet is suggested to differ in terms of fast and slow life history strategies (McDonald et al., 2012). Second, individuals who score highly on these dark traits are recognised for their tendency to exaggerate and may have overestimated their own abilities to successfully meet deadlines. Future research would therefore benefit from investigating this form of procrastination using more objective real-life measures. Finally, we measured active procrastination using the Active Procrastination Scale (APS), and it has

more recently been suggested that the Delay Questionnaire (Haghbin & Pychil, 2015) may be a more robust measure for tapping into distinct types of intentional task delay (Chowdhury & Pychil, 2018). Future research may therefore consider using this alternative measure

5. Conclusion

Although, psychopathy, Machiavellianism and narcissism have previously been linked to dysfunctional forms of procrastination, the present findings show that these dark traits, including the latest arrival of everyday sadism positively related to a functional procrastination type. All traits positively predicted intentional procrastination. Psychopathy, Machiavellianism and sadism predicted the ability to successfully meet deadlines. Narcissism was the only trait however that positively predicted poorer outcome satisfaction, failure to meet deadlines and emerged as the only negative predictor of passive procrastination. Future research should explore the different facets of narcissism in relation to active procrastination however, to provide a more comprehensive explanation of this multifaceted trait. Our results highlight the importance of considering the Dark Tetrad traits within the context of not only dysfunctional procrastination types, but also in relation to a positively functioning form of procrastination, which may better facilitate a fast life history strategy.

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