

CHAPTER FIVE

THE DARK TRIAD AND NEGATIVE CREATIVITY

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Abstract

Negative creativity is shaping into a legitimate sub-construct of creativity. To meet the goal of studying it in conjunction with the Dark Triad, participants ($N = 129$, 88 Indians, 88 women, $M_{\text{age}} = 25.09$ years, $SD = 10.03$) completed two creativity measures and three personality scales. The Alternate Uses Test (AUT) and a self-report Creativity measure were used to assess the two valences of creativity—positive and negative. The relationship between negative creativity and negative personality traits, namely, the Dark Triad, was investigated to study the criterion validity of the creativity measures. While the Dark Triad predicted endorsement of negative creativity on the Creativity measure, there was no discernable relationship with the generation of negative-creative responses on the AUT. Further, the AUT led to the generation of less than two percent of negative-creative responses. Suggestions for improving the AUT as a tool to measure negative creativity are discussed.

Keywords: negative creativity; Dark Triad; malevolent creativity; Alternate Uses Test

Double Negatives: The Dark Triad and Negative Creativity

Negative creativity is a fairly recent construct in creativity literature. After the introduction of the term in James, Clark, and Cropanzano's (1999) work, the construct has not been adequately measured, despite having a working definition. However, two measures of creativity have attempted to address positive and negative creativity in the recent past (Harris, Reiter-Palmon, & Kaufman 2013; Kapoor 2015). This paper aims to determine the linkage between negative creativity, operationalized as self-reported engagement in and generation of creativity, and a cluster of negative personality traits, namely, the Dark Triad (DT; Paulhus & Williams 2002).

If negative creativity, as measured by the Creativity measure, continued to be associated with the DT (Kapoor 2015), it would provide some external criterion validation for how the construct is being measured. Further, if the negative-original responses generated by the Alternate Uses Test (AUT; Guilford 1967) were not associated with the DT, it would provide initial evidence for the AUT's limited capacity to adequately measure negative creativity, in its current form.

Negative Creativity

The "dark side" of creativity was first reviewed in artistic, scientific, and technological creativity by McLaren (1993). He also suggested that creativity would be fully comprehensible when studied in the context of morality and intentionality (see also Runco & Nemiro 2003). In his words, "creativity, as a distinctly human preoccupation, clearly has its dark side. To be naive about this is to court disaster," (McLaren 1993, p. 142).

James et al. (1999) argued that in addition to being novel and useful, creativity is goal-oriented; this added the component of the actor's intent. As goals could be classified as positively or negatively motivated, individuals could develop creative means to meet negative goals. In essence, negative creativity is the creation of original products, used to meet negative goals, which are primarily beneficial to the creative individual. However, the by-product of the creative act can be some degree of harm to others. This yields a selfish notion of creativity (see also Eisenman 2008), which has been marginally studied in earlier work.

Although James et al. (1999) included the actor's intent in their definition of creativity, they did not explicitly state whether the intent was to *deliberately* cause harm to others or not. Thus, negative creativity came to be conceptualized as using the creative process to meet negative goals, which in theory harms others, but not deliberately so (see also Cropley et al. 2008b). For instance, developing a new method to cheat on an examination would be classified as negative creativity. Here, a neutral creative process is used to meet the socially negative goal of cheating, which is primarily beneficial to the actor, but not deliberately harmful to others. Using the creative process to meet negative goals and deliberately cause harm was *malevolent creativity* (Cropley et al. 2008a).

Although negative creativity was examined in a few studies at the turn of the century (Clark & James 1999; James et al. 1999), a dedicated measure was not developed to study the valences of creativity in conjunction. However, recently, an adapted AUT method, that scored valence of responses in addition to originality (Harris et al. 2013), and a Creativity measure, that assessed likelihood of endorsement of positive-creative, negative-creative, or neutral options (Kapoor 2015) have been developed.

Alternate Uses Test and Negative Creativity

As the AUT has been adapted to measure the valences of creativity (Lee & Dow 2011; Harris et al. 2013), it is important to review the measure in the context of negative creativity. Guilford's (1967) AUT is a frequently used metric of divergent thinking, assessing the likelihood of the capacity to engage in creative thought. It typically involves generating as many novel uses as possible for common objects, like bricks, or shoes. The AUT assesses creativity through the following:

- a) Originality, defined as statistical infrequency of the response,
- b) Fluency, defined as the number of uses generated,
- c) Flexibility, defined as the number of varying categories covered across the uses,
- d) Elaboration, defined as how much each response is verbally elaborated.

The AUT has also been adapted to study real-world divergent thinking, as in Clark and James (1999) and in Harris et al. (2013, Study 1). In such tasks, objects are replaced with social situations, requiring creative problem solving. The responses are typically coded along the same metrics described above. However, beginning with Lee and Dow's (2011) work, and subsequently, Harris et al.'s (2013) studies, another metric was added while scoring AUT responses—valence. Thus, to adapt the AUT methodology to enable the study of negative creativity, independent raters were required to code the originality and valence of responses. Although Lee and Dow (2011) and Harris et al. (2013) referred to negative-original responses as comprising malevolent creativity (Cropley et al. 2008a), since the nature of participants' intents was unknown, the scoring adaptation could be assumed to measure negative creativity. However, this AUT adaptation was not associated with another measure of negative creativity, to validate whether the same construct was being measured.

The Dark Triad

Despite a dearth of robust valence-inclusive creativity measures, recent research has associated positive creativity with negatively tinged behaviours, particularly lying (e.g., Gino & Ariely 2012). In addition to behaviours with a negative connotation, negatively shaded personality characteristics have also been studied in the context of positive and negative creativity. Kapoor (2015) investigated the relationship between the DT and self-reported engagement in positive or negative creativity, through a forced choice measure. Narcissism predicted positive creativity (see also Goncalo et al. 2010); psychopathy predicted negative creativity; and the DT composite was strongly and positively associated with endorsement of negative creativity.

Given preliminary findings in this area of personality and negative creativity, it was important to also assess the relationship between negative-original responses generated from the AUT and the DT. The DT of personality (Paulhus & Williams 2002) consists of three related and socially undesirable personality constructs, namely, Machiavellianism, psychopathy, and narcissism. The DT consists of subclinical levels of these traits, and assumes that they are non-pathological. This negative cluster of personality has been studied in the context of relationships (Jonason et al. 2012; Jonason et al. 2009), impulsivity (Jones & Paulhus 2011), and evolutionary theory (McDonald et al. 2012), to name a few, and is an emerging field of personality research (see also Furnham et al. 2013).

The Present Study

Thus, this study aimed to investigate the relationships between negative creativity, as assessed by two measures, and the Dark Triad. It was hypothesized that the DT would be able to predict endorsement of negative creativity on the Creativity measure, consistent with Kapoor (2015), but would not be associated with scant negative-original responses (e.g., Harris et al. 2013) on the AUT.

Method

Participants

An international sample of one hundred and twenty nine participants (88 Indians, 88 women, $M_{\text{age}} = 25.09$ years, $SD = 10.03$) was obtained after data screening, through an online form. Data were cleaned on the basis of self-reported fluency in English, and self-reported attention and honesty while responding to the study; these were scaled from 1 to 10.

Measures

Creativity Measure

A self-report Creativity measure assessing the likelihood of engaging in creativity was used (Kapoor 2015). Each item described a situation that could proceed in one of three ways: neutral, positive-creative, and negative-creative; participants responded to each option based on how likely they would be to engage in that behaviour. Thus, a 5-point Likert scale (1 = *extremely unlikely* to 5 = *extremely likely*) followed each of the three alternatives. Likelihood of engagement scores provided on each of the three options were averaged across the 15 situations, to yield a single positive-creative, negative-creative, and neutral score for each participant. The internal consis-

tency of the measure ranged from moderate on the neutral items ($\alpha = .55$) to acceptable on the positive items ($\alpha = .64$) to high on the negative items ($\alpha = .71$).

Alternate Uses Test

Guilford's (1967) Alternate Uses test was used to assess divergent thinking. In line with Harris et al.'s (2013) improvement over Lee and Dow's (2011) methodology, the AUT required participants to generate as many original uses for three common objects—a brick, a shoe, and a coffee cup. The responses given by each participant were coded with respect to originality (1 = *very unoriginal* to 5 = *very original*) and valence (1 = *very negative* to 5 = *very positive*) by three independent raters, using Harris et al.'s (2013) rating scales. The three raters were female postgraduates in psychology ($M_{\text{age}} = 22.67$ years); two raters had prior experience with qualitative coding, while one was a novice rater. Further, the raters were blind to the purpose of the study, and made their ratings independently. Each rater coded the data in a different sequence, to avoid biases due to order effects. The reliability of the ratings on originality and valence across the three raters was computed using the Intra-Class Correlation Coefficient (ICC 2), used when the same raters are making all ratings.

ICCs were computed for originality and valence ratings for each response, leading to six sets of ratings provided by each rater. For brick originality, ICC (2, 3) = .81, indicating 81% true variance in the mean rating across three raters, and only 19% error variance. Similarly, for brick valence, ICC (2, 3) = .81; for shoe originality, ICC (2, 3) = .91; for shoe valence, ICC (2, 3) = .67; for coffee originality, ICC (2, 3) = .85; and for coffee valence, ICC (2, 3) = .68. Thus, all ICCs were close to or above the .70 cutoff. Because significant ICCs were obtained, the ratings across the three raters were averaged for each response, leading to a reduction from 18 ratings (3 per response, 6 per rater) to only six ratings (one average for all three raters per response, for six response types: brick-original, brick-valence, shoe-original, shoe-valence, coffee-original, coffee-valence).

Machiavellianism-IV (MACH-IV)

This was used in its 20-item, 5 point Likert scale format (1 = *strongly disagree* to 5 = *strongly agree*; Christie & Geis 1970), producing a cumulative score. The scale had high internal consistency in the present study, $\alpha = .78$.

Levenson Self-Report Psychopathy Scale (LSRP)

This measure was used in its 26-item, 4 point Likert scale format (1 = *disagree strongly* to 4 = *agree strongly*; Levenson et al. 1995), yielding a cumu-

lative score. Items assessed primary and secondary psychopathy. In general, *secondaries* act in response to emotional disturbances reflecting more impulsivity, while *primaries* are manipulative, emotionally callous, and pathological liars. The scale displayed high internal consistency through alpha reliabilities for the full scale ($\alpha = .85$), primary psychopathy subscale ($\alpha = .85$), and secondary psychopathy subscale ($\alpha = .76$).

Narcissistic Personality Inventory-16 (NPI)

This scale was used in its 16-item forced choice format (Ames et al. 2006), yielding a cumulative score. The scale had moderate internal consistency in the present study, $\alpha = .66$.

Procedure

Participants were recruited through online sampling and multiple site entry. Those interested responded to the form at their own convenience. The form began with an informed consent page, which included information about the nature of the study, the nature of the tasks, possible benefits and risks of participation and the researchers' contact information. First, participants completed the Creativity measure; namely, the likelihood of engaging in various behaviours in response to 15 situations. Thereafter, they were presented with instructions to generate as many original uses as possible for a brick, a shoe, and a coffee cup; it was emphasized that there were no correct or incorrect answers. Then, they completed the three personality scales.

Results

Data obtained from the Creativity measure were reduced from three scores for each of the 15 situations per participant, to three averaged scores: likelihood of engaging in the positive-creative option, the negative-creative option, and the neutral option.

Data obtained from the AUT consisted of one or more responses from each participant, for each of the three objects. The total number of responses provided for each object comprised the brick-fluency, shoe-fluency, and coffee-fluency scores. On the basis of the single originality and valence scores, each response was classified as positive-original (originality > 3 , valence > 3) or negative-original (originality > 3 , valence < 3). Responses with a mean originality or valence score of 3 were not included while counting the number of positive-original or negative-original responses, in line with Harris et al.'s (2013) methodology. The total number of positive-original and negative-original responses for each participant was thus obtained. The single originality and valence score for each response was then averaged for responses

given by each participant. Total fluency and total positive-original and negative-original responses were summated.

Descriptive Statistics

Table 1 (appendix 1, page 111) displays the descriptive statistics for positive-creative, negative-creative, and neutral scores from the Creativity measure; and fluency, originality, valence, positive-original and negative-original metrics for brick, shoe, coffee, and overall AUT responses. Descriptive statistics for the personality scales were also computed: MACH-IV ($M = 56.76$, $SD = 9.75$), LSRP ($M = 52.98$, $SD = 10.38$), and NPI ($M = 4.47$, $SD = 2.82$). As some data sets included outliers, medians were also reported as measures of central tendency. The total number of responses across the objects was 1864, of which 1171 were positive-original responses and only 40 were negative-original. Thus, the AUT in its present form may not facilitate the production of negative-original responses; preliminarily, an alteration in instruction or kinds of objects may be warranted.

Inferential Statistics

With respect to the Creativity measure, a one-way ANOVA revealed that the likelihood of engaging in a neutral option was higher than engaging in a positive-creative option, in turn higher than selecting a negative-creative option, $F(2, 384) = 425.98$, $p < .001$, $\eta_p^2 = .69$ (see page 112). This was consistent with the assumption that creativity, being a normally distributed trait (e.g., Eysenck 1993), would be endorsed less often than non-creative or neutral options.

With respect to the AUT, mean originality and valence scores obtained for each participant for each object were not averaged across objects, as differences in mean valence were significant across objects, $F(2, 384) = 10.96$, $p < .001$, $\eta_p^2 = .05$; the valence of shoe was less than that for brick, which was less than that for coffee. Mean differences in originality were not obtained, $F(2, 384) = 1.61$, $p = .20$, ns. Thus, differential valences across objects provided preliminary support for controlling the inherent valence of objects in the AUT; for instance, providing negatively valenced items like a knife in addition to shoes and coffee cups.

Correlations between Creativity Metrics and the DT

To determine the association between the creativity measures and DT scales, correlations (Table 2) and multiple regressions were computed. There was a positive and significant association between Machiavellianism and LSRP, and its primary and secondary subscales. However, there was no significant relationship between MACH-IV and NPI, consistent with findings that this

correlation is usually the lowest (Furnham et al. 2013). The LSRP subscales correlated positively with each other, and with the total score, indicative of an internally consistent measure. In addition, psychopathy correlated significantly with narcissism. Thus, the DT scales were positively correlated with each other in all cases but one, providing evidence for a personality cluster (Paulhus & Williams 2002).

The negative-creative score was positively associated with Machiavellianism, primary psychopathy, overall psychopathy, narcissism, and the DT *z* Composite (Jonason et al. 2009), consistent with prior work (Kapoor 2015). The absence of a relationship with secondary psychopathy indicated the importance of delineating the two subtypes of psychopathy in the context of negative creativity. The positive-creative score was not associated with any DT measures.

With respect to brick responses, correlational analyses assessed the relationships among fluency, originality, valence, positive-original, and negative-original responses and the DT measures. Secondary psychopathy was negatively correlated with originality, and Machiavellianism was negatively correlated with valence. The latter implied that greater the negative valence in a response, higher the MACH-IV score. Negative-original responses were not associated with any DT scales.

With respect to shoe responses, narcissism was negatively associated with valence, suggesting that greater the negative valence in a response, higher the narcissism score. Similarly, the DT Composite was marginally associated with valence. However, negative-original responses were not associated with any DT scales.

With respect to coffee responses, narcissism was positively associated with valence, and the DT composite was also positively associated with valence. Thus, the higher the positive valence of a response, the higher the narcissism and DT composite scores. Moreover, neither negative-original nor positive-original responses were associated with the DT scales. Such discrepant findings may be due to the differential functioning of valence across objects.

Overall fluency, positive-original, and negative-original responses were also unrelated to the DT scales. Thus, the difficulties in the assessment of negative creativity by the AUT may have lead to non-significant results when assessing the AUT metrics in conjunction with personality.

Criterion Validation

Apart from correlations between creativity and DT, multiple regressions were also computed to assess the ability of the DT scales to predict negative creativity. These analyses would provide preliminary evidence for an external criterion validation of the negative creativity construct.

First, the model negative-creative score as a function of Machiavellianism, psychopathy, and narcissism was tested. The linear combination of the personality traits were significantly related to negative creativity, $F(3, 125) = 8.52$, $MSE = 1.54$, $p < .001$. R was .41, indicating that 17% of the variance in the negative-creative score was due to the linear combination of the predictors. However, only psychopathy was a significant predictor of negative creativity, $B = .31$, $t = 2.82$, $p = .006$. Based on correlational evidence, the next model replaced psychopathy with primary psychopathy as a predictor. Once again, the overall model was significant, $F(3, 125) = 12.16$, $MSE = 2.04$, $p < .001$, and R increased to .48, implying that 23% of the variance in the negative-creative score was due to the linear combination of the predictors. Primary psychopathy was a better predictor than psychopathy, $B = .38$, $t = 3.56$, $p < .001$. Moreover, given the high correlation between the predictors, multicollinearity may have affected the predictive power of each independent predictor. A model with positive-creative score as the dependent measure was not tested due to the lack of significant associations between this score and the DT scales. Hence, a multiple regression seemed unnecessary.

Second, similar models were tested with the dependent measure being the number of negative-original responses as a function of the DT scales in conjunction. However, as the number of negative-original responses was extremely scant, with more than 50% of participants providing zero negative-original responses, zero-inflated negative binomial regression models were tested. This statistical procedure is used when a frequency variable is a dependent measure, and more than half of its responses are zero. It is a combination of a zero-inflated model, and a negative binomial regression.

With respect to the model—negative-original responses are a function of Machiavellianism, psychopathy, and narcissism—higher Machiavellianism predicted higher number of negative-original responses for a brick, controlling for the other two DT scales, $B = 1.76$, $z = 2.26$, $p = .02$.

With respect to shoe responses, higher narcissism predicted higher number of negative-original responses, controlling the other two DT scales, $B = 1.05$, $z = 1.83$, $p = .07$. Although the other two predictors were non-significant, the model as a whole significantly differed from the null model; log likelihood = .02. The DT did not predict negative-original uses for a coffee cup, as the predictors in the model were non-significant.

Although zero-inflated negative binomial models were statistically appropriate due to the nature of the data, upon further analyses, all models were found to be less superior to negative binomial models. Moreover, none of the negative binomial models revealed statistically significant results. Hence, the DT scales were not good predictors of the generation of negative-original responses on the AUT.

Discussion

Negative creativity is a developing construct with few available measurement tools. In particular, Harris et al.'s (2013) adapted AUT and Kapoor's (2015) Creativity measure were used to determine the association between negative creativity and the DT. Although descriptive statistics revealed the AUT's relatively limited ability to assess negative creativity, it did not necessarily display whether the Creativity measure examined negative creativity. The latter goal could be met by studying the association between the Creativity measure and a third measure of negative creativity. However, it could also be met by assessing the measures' associations with personality constructs that they would theoretically be related to—such as the DT—to provide preliminary criterion validation.

The negative-creative score on the Creativity measure was strongly and positively associated with the three components of the DT, and its composite; further, the DT components predicted endorsement of negative creativity on the measure. Thus, although the convergent validity of negative creativity was not established in this study, the construct was consistently associated with a dark cluster of personality (Kapoor 2015).

The correlations between the negative-original responses on the AUT and the DT measures were not significant; the scant negative-original responses on the AUT rendered the variable almost binomial in nature. Similarly, negative binomial models provided no relationship between the AUT negative-original responses and the DT measures. However, the negative relationships between the valence scale and personality metrics were promising, in that, if the AUT were adapted to suit the collection of negative-original responses, the generation of such responses could increase, and perhaps lead to significant associations with the Dark Triad cluster.

Although the AUT is the method of choice while examining positive creativity, its current form does not tap into the negative creativity construct well. This is not to say that the Creativity measure with its format of endorsing creative options is the most appropriate, but that the AUT may need additional alterations apart from scoring valence. Although the Creativity measure provides an objective score on positive- and negative-creative options, it does not require the generation of creative responses, and hence is not a completely adequate assessment of creativity. However, as the Creativity measure adopts social situations, assessing real-world divergent thinking tasks and determining their validity in assessing negative creativity may be attempted.

In sum, this study provided initial evidence for the AUT's limited ability to generate an adequate number of negative-original responses, and thereby to measure negative creativity. The results also provided evidence for the Creativity measure's internal consistency, and associated the metric with the Dark Triad, to provide criterion validity. To improve the AUT as a measure of

negative creativity, real-world divergent thinking situations, or alterations in instructions and objects are recommended.

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Appendix 1

Table 1
Descriptive Statistics for the Creativity measure and AUT (Brick, Shoe, Coffee, and Overall)

Variable	Sum	Min.	Max.	<i>M</i>	Median	<i>SD</i>
Creativity Measure						
Mean Positive-Creative	398.93	1.73	4.27	3.09	3.13	0.53
Mean Negative-Creative	263.20	1.00	3.73	2.04	2.00	0.46
Mean Neutral	482.47	2.27	4.53	3.74	3.73	0.42
AUT Brick						
Fluency	681.00	0.00	17.00	5.28	5.00	3.46
Originality	417.74	0.00	4.00	3.24	3.41	0.61
Valence	452.49	0.00	4.00	3.51	3.67	0.44
Positive-Original	489.00	0.00	15.00	3.79	3.00	2.95
Negative-Original	9.00	0.00	3.00	0.07	0.00	0.34
AUT Shoe						
Fluency	563.00	0.00	19.00	4.36	4.00	3.50
Originality	407.02	0.00	4.33	3.16	3.50	1.07
Valence	432.93	0.00	4.00	3.36	3.47	0.67
Positive-Original	362.00	0.00	17.00	2.81	2.00	2.95
Negative-Original	12.00	0.00	2.00	0.09	0.00	0.32
AUT Coffee						
Fluency	620.00	0.00	25.00	4.81	4.00	3.80
Originality	394.83	0.00	4.33	3.06	3.25	0.77
Valence	471.78	0.00	4.33	3.66	3.67	0.40
Positive-Original	320.00	0.00	13.00	2.48	2.00	2.64
Negative-Original	19.00	0.00	2.00	0.15	0.00	0.40
AUT Overall						
Fluency	1864.00	3.00	57.00	14.45	12.00	9.83
Positive-Original	1171.00	0.00	40.00	9.08	7.00	7.65
Negative-Original	40.00	0.00	4.00	0.31	0.00	0.67

Appendix 2

Table 2
Correlations between the Creativity measure, AUT metrics, and the Dark Triad

Variable	1	2	2a	2b	3	4
1. MACH	1					
2. LSRP	.66**	1				
2a. LSRP-P	.58**	.87**	1			
2b. LSRP-S	.47**	.72**	.28**	1		
3. NPI	.12	.31**	.39**	.05	1	
4. DT Composite	.76**	.86**	.80**	.54**	.63**	1
5. Mean Positive-Creative	.04	.08	.14	-.05	.09	.11
6. Mean Negative-Creative	.34**	.40**	.47**	.12	.21**	.43**
7. Mean Neutral	.02	-.06	-.02	-.09	-.12	-.07
	1	2	2a	2b	3	4
8. Brick Fluency	-.04	-.03	.03	-.10	-.08	-.08
9. Brick Originality	-.04	-.14	-.02	-.24**	-.04	-.10
10. Brick Valence	-.23**	-.09	-.06	-.09	.09	-.11
11. Brick Positive-Original	.05	0	.09	-.12	-.04	-.01
12. Brick Negative-Original	.13	.09	.10	.03	0	.12
	1	2	2a	2b	3	4
13. Shoe Fluency	.01	.02	.04	-.01	-.05	-.02
14. Shoe Originality	.05	-.03	-.05	.01	-.07	-.03
15. Shoe Valence	-.04	-.06	-.09	.02	-.20*	-.13
16. Shoe Positive-Original	.07	.01	-.01	.03	-.02	.01
17. Shoe Negative-Original	-.13	-.04	-.04	-.02	-.01	-.08
	1	2	2a	2b	3	4
18. Coffee Fluency	.05	.02	.05	-.03	-.05	0
19. Coffee Originality	.10	.09	.11	.01	.02	.09
20. Coffee Valence	.03	.08	.08	.04	.16*	.14*
21. Coffee Positive-Original	.08	.07	.08	.02	-.04	.04
22. Coffee Negative-Original	-.02	-.06	-.01	-.09	-.06	-.06
	1	2	2a	2b	3	4
23. Overall Fluency	.01	.01	.04	-.05	-.06	-.03
24. Overall Positive-Original	.07	.03	.06	-.03	-.04	.01
25. Overall Negative-Original	-.01	-.01	.03	-.05	-.04	-.02