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Dark Triad and Humor Styles: A Study on White Collar Workers from Türkiye*

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Abstract

Humor plays a crucial role in psychological functioning, influencing goal achievement, emotional regulation, and interpersonal interactions. This study explores the effects of dark triad on humor styles and to inquire about the inconsistent relations previously reported between narcissism and self-enhancing humor within a Turkish sample. Utilizing the Humor Styles Questionnaire and the Dirty Dozen Dark Triad inventory, data were collected from 468 white-collar employees working in various companies through online questionnaire. The results indicated that Narcissism positively affects all humor styles, while Psychopathy significantly associated with aggressive, self-enhancing and self-defeating humor. In contrast, Machiavellianism shows a negative effect with self-defeating humor. These findings underscore the complex interplay between personality traits and humor, suggesting that while Narcissism may enhance both positive and negative humor styles, Psychopathy predominantly influences negative styles, and Machiavellianism appears less involved. The study discusses the implications of these results and provides suggestions for future research.

***Keywords**: Dark triad, Humor Styles, Machiavellianism, Narcissism, Psychopathy*
***JEL Classification**: M19, M54*

Karanlık Üçlü ve Mizah Tarzları: Türkiye'deki Beyaz Yakalılar Üzerine Bir Araştırma

Özet

Mizah; hedeflere ulaşmayı, duygusal düzenlemeyi ve kişilerarası etkileşimleri etkileyerek psikolojik işleyişte önemli bir rol oynamaktadır. Bu çalışma, karanlık üçlü kişilik özelliklerinin mizah stilleri üzerindeki etkilerini araştırmakta ve narsisizm ile kendini geliştirici mizah arasında daha önce bulgulanan tutarsız ilişkileri Türkiye'den bir örneklem üzerinde incelemektir. Çalışmada, Mizah Stilleri Anketi ve Kirli Düzine Karanlık Üçlü envanteri kullanılarak, çeşitli şirketlerde çalışan 468 beyaz yakalı çalışandan online anket aracılığıyla veri toplanmıştır. Sonuçlar, Narsisizmin tüm mizah stillerini olumlu yönde etkilediğini, psikopatinin ise agresif, kendini geliştirici ve kendini yıkıcı mizah ile anlamlı bir şekilde ilişkilendirildiğini göstermiştir. Buna karşılık, Makyavelizm kendini yıkıcı mizah üzerinde olumsuz bir etki göstermektedir. Bu bulgular, kişilik özellikleri ile mizah arasındaki karmaşık etkileşimi vurgulamakta ve Narsisizmin hem olumlu hem de olumsuz mizah stillerini geliştirebileceğini, Psikopatinin esasen olumsuz stilleri etkilediğini ve Makyavelizmin etkisinin daha az olduğunu göstermektedir. Araştırmanın bulguları sonuç bölümünde tartışılmıştır.

***Anahtar Kelimeler**: Karanlık Üçlü, Mizah Tarzları, Makyavelizm, Narsisizm, Psikopati*
***JEL Sınıflandırması**: M19, M54*

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1. Introduction

Humor enables developing functional and dysfunctional strategies towards achieving goals, satisfying psychological needs, coping with emotional and interpersonal distresses of life (Martin et al., 2012). As a fundamental part of the personality, the construct is related to a consistent structure composed of cognitions, emotions, and behaviors that are persistent over time and across situations (McCrae and Costa Jr., 2003; Ruch, 2008). Martin et al. (2003) considered humor, which is induced by intrinsic inclinations, as a response driven by specific traits, also an indicator of habitual tendencies that sets foundation for individual differences. In this context, humor is a trait-like construct with behavioral consequences used for accomplishment and satisfaction. Adopting this point of view, the effect of personality traits on humor styles is widely studied (Mendiburo-Seguel et al., 2015; Vernon et al., 2008). Supporting the argument above, the findings indicated that extraversion and openness to experience are positively correlated with positive humor styles (affiliative and self-enhancing). Additionally, positive correlations between negative humor styles (aggressive and self-defeating) and neuroticism, as well as negative correlations with agreeableness and conscientiousness, are reported (Ford et al., 2016; Plessen et al., 2020).

Further studies showed significant relations between not only normal but aversive personality traits and humor styles as well. Of them, Dark Triad defined by Paulhus and Williams (2002) as a constellation of subclinical and maladaptive traits consisting of three sub-dimensions: Machiavellianism (Mach), Psychopathy (Psy), and Narcissism (Narc), has been subjected to numerous research examining its effects on humor styles (Dionigi et al., 2022; Martin et al., 2012; Veselka et al., 2010; Yee and Lee, 2022). Findings indicated that Psy and Mach are correlated with negative humor styles and not with positive styles, Narc is related to positive humor styles and not with negative humor styles (Martin et al., 2012; Veselka et al., 2010). The relationships between the big five personality traits and the dark triad have also been studied intensively and negative relations between Mach, Psy, consciousness and agreeableness, positive relations between Mach, Psy and neuroticism, positive relations between Narc, extraversion and openness, negative relations between Narc and agreeableness have been reported (Martin et al., 2003; Vernon et al., 2008).

Considering the shared core that previous findings indicate, humor and Dark Triad can be hypothesized to have structural connections at traits level. Supporting this assumption Psy, Mach and negative humor styles are asserted to relate low conscientiousness and agreeableness and high neuroticism; Narc and positive humor styles are positively related to extraversion and openness (Veselka et al., 2010). The only inconsistent association reported between Dark Triad sub-dimensions and humor styles is related to Narc and self-enhancing humor. In the initial study by Veselka et al. (2010), a slight positive correlation was noted in one sample, while no notable correlation was found in another. Similarly, Martin et al. (2012) reported no significant link between Narc and self-enhancing humor in their replication study.

Humor is a convenient avenue for Dark Triad traits to be exercised implicitly or explicitly, not only for attaining goals but also for fulfilling needs. On the other hand, Dark Triad consists of socially aversive traits, within the range of generally accepted norms which makes the concept hard to identify especially in everyday interactions because of its latent nature. Hence, exploring the causal relations between concepts may contribute to the literature. Testing the natural and theoretical link between dark triad and humor styles and providing evidence regarding associations between variables on a sample from Turkiye is the first purpose of this study. As previous studies suggest correlations between personality traits, humor styles, and Dark Triad constructs, it is worthwhile to study the subject further. The second purpose of this study is to enhance the current knowledge by inquiring about the inconsistent relations reported between Narc and self-enhancing humor.

2. Humor and Dark Triad

Humor concept has attracted ongoing interest throughout the last decades. In their pivotal work, Martin et al. (2003) suggested a humor model that includes positive, adaptive styles like affiliative (AFH) and self-enhancing (SEH), and negative, maladaptive styles such as aggressive (AGH) and self-defeating (SDH) humor. AFH pertains to the inclination to entertain others in order to enhance relationships and bonds. It encompasses jokes and light-hearted humor that ease tension, serving as a catalyst in social relationships (Martin et al., 2003; Veselka et al., 2010). AFH is connected with positive outcomes such as healthy relationships, intimacy, relationship satisfaction, and social support, and it shows a negative correlation with loneliness (Martin et al., 2012). SEH involves deriving amusement from life's challenges and maintaining a humorous outlook when confronted with stressful situations (Martin et al., 2012; Plessen et al., 2020). SEH, associated with self-esteem, optimism, positive affect, and emotional well-being, serves as a coping mechanism for stress (Vernon et al., 2008). AGH seeks to entertain or elevate oneself by demeaning others. AGH, which negatively impacts relationship satisfaction and is associated with anger, hostility, aggression, and bullying, involves using sarcasm, teasing, and insults to harm or manipulate others (Martin et al., 2003; Veselka et al., 2010). Finally, SDH is directed against the self to amuse others, usually demonstrated by flattering others by putting oneself down. It involves self-disparaging, self-denigrating, self-sacrificing, and ingratiating behaviors, which are positively associated with hostility and emotional distress, and inversely related to self-esteem and optimism (Dionigi et al., 2022; Vernon et al., 2008).

Although relations between humor, negative attitudes and behaviors such as hostility, aggression, manipulation, teasing, disparaging, threatening etc. are well established, the links between dark personality traits and humor with similar tendencies remain an emerging field that requires further investigation. Dark Triad is a conceptually distinct yet empirically overlapping construct that is comprised of Narc, Mach, and Psy at the sub-clinical level, sharing a common core of disagreeableness, emotional coldness, duplicity, callousness, exploitativeness, and

manipulativeness (Furnham et al., 2013; Lee and Ashton, 2005). Mach manifests itself with cold, cynical, immoral, unprincipled, manipulative behaviors. Psy is marked by impulsive, thrill-seeking behaviors accompanied by diminished empathy, anxiety and respect for others. Narc shows extreme self-love and entitlement, strengthened by grandiosity, superiority and dominance (Furtner et al., 2011; Jones and Paulhus, 2009; Raskin and Terry, 1988).

Previous studies showed that Psy and Mach are correlated with SDH and AGH styles (Veselka et al., 2010). The relation can be explained using two layers: first, Psy, Mach, SDH and AGH are negatively associated with consciousness and agreeableness, positively associated with neuroticism at trait level which tends to exhibit itself by emotional distress, externalization and hostile behaviors (Jakobwitz and Egan, 2006; Martin et al., 2012; Vernon, et al., 2008a; Vernon et al., 2009). Second, at the behavioral level, Mach is related to dishonest, cheating, unethical behaviors to manipulate and control others; Psy is correlated with hostile, harming, aggressive, impulsive, bullying behaviors to enhance self (Seibert et al., 2011; Vernon, et al., 2008b, Williams et al., 2007). AGH involves ridicule, teasing, sarcasm, disparaging, put downs or inflicting harm in various forms which are overlapping with psychopathic behaviors as well as Mach, in quest for obtaining power over others for personal gain by manipulating them (Diogni 2022; Martin et al., 2012; Zeigler-Hill et al., 2016). SDH exhibits itself with self-disparaging, self-denigrating, sacrificing and ingratiating behaviors that provide a convenient avenue for Mach to strategically operationalize the concept through deliberately putting themselves down, aiming to flatter others subtly (Martin et al., 2012; Diogni et al., 2022; Vernon et al., 2008; Veselka et al., 2010). In contrast, Narc is the only personality trait that exhibits inconsistent relationships with the SEH. Although AFH and Narc have been significantly and positively correlated in previous studies (Besser and Zeigler-Hill, 2011, Veselka et al., 2010), same cannot be said for SEH. At trait level Narc and SEH are related with extraversion, openness. Conversely, Narc negatively correlates with agreeableness, opposite to SEH, which is positively correlated (Martin et al., 2003; Vernon et al., 2008). Since Narc is a grandiose yet vulnerable concept, contradictory findings can be attributed to its variable nature, considering hostile behaviors displayed especially when sense of self is threatened (Stucke and Sporer, 2002).

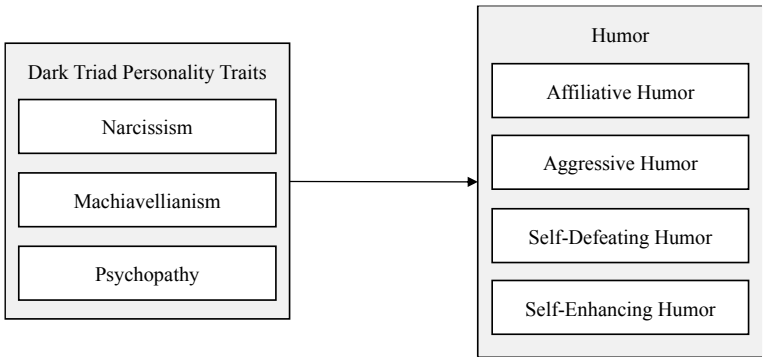


Figure 1. Conceptual Model

Taking both trait level and behavioral similarities into account following research model and hypothesis is structured.

H_1: *Dark Triad personality traits have an effect on humor styles*.

3. Methodology

3.1. Instruments

The Humor Styles Questionnaire (HSQ), consisting of 32 items, was designed by Martin et al. (2003) and translated into Turkish by Yerlikaya (2003). This instrument assesses SDH, AFH, SEH, and AGH styles. Participants provided responses to statements reflecting on these humor types. Additionally, the Dirty Dozen Dark Triad inventory, designed by Jonason and Webster (2010) and translated into Turkish by Özsoy et al. (2017), was utilized to examine individual differences in the Dark Triad traits, which include Psy, Mach and Narc. Responses for all items were recorded on a 5-point Likert Scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 1. Sample Profile

Variable	Category	F	%
Gender	Female	292	62.4
	Male	171	36.5
	Prefer not to state	5	1.1
Marital Status	Married	206	44
	Single	262	56
Education Level	Highschool and less	15	3.9
	Associate	30	7.8
	Undergraduate	259	67.4
	Graduate	80	20.9
Age	Mean	31.99	Min: 20
	Standard Dev.	8.81	Max: 71
Experience in recent company (years)	Mean	4.71	Min: <1
	Standard Dev.	6.13	Max: 42
Sector	Informatics	76	16.2
	Consultancy	28	6
	Education	59	12.6
	Energy	3	0.6
	Finance	58	12.4
	Food	13	2.8
	Construction	20	4.3
	Logistics	10	2.1
	Automotive	24	5.1
	Retail	8	1.7
	Health	36	7.7
	Production	29	6.2
	Other	104	22.2

3.2.Sample and Data Collection

The population of the study consisted of white-collar employees working in various companies in İstanbul. An online Turkish questionnaire was developed and uploaded to Google Forms with two main sections: 44 instrument items and demographic inquiries. The respondents were able to access the questionnaire between the 10th and 24th of January 2024. The questionnaire link was distributed using convenience and snowball sampling methods. A total of 468 respondents completed the questionnaire without any missing responses. The demographic details of the sample, comprising 468 white-collar employees, are presented in Table 1.

Considering the sectors in which participants are employed, the Information sector stands out with 16.2%, followed by Education (12.6%) and Finance (12.4%). Females represent the majority, comprising 62.4% of the sample, while males constitute 36.5%. Additionally, the participants' educational background indicates that a significant proportion hold undergraduate degrees (67.4%), followed by graduates (20.9%). The participants have a mean age of around 32 years, with a standard deviation of 8.81, reflecting a relatively diverse age range. Finally, the average experience in the recent company is approximately 4.71 years, with a considerable standard deviation of 6.13, suggesting variability in tenure among participants.

4. Data Analysis and Findings

The conceptual model was estimated using structural equation modeling (SEM), chosen for its capability to address measurement error using multi-item measures. Assessment of the constructs assumed a normal distribution as illustrated in Table 3, supported by skewness and kurtosis results falling within the tolerable limits of -2 to +2 (Hair et al., 2010). Employing a two-step SEM methodology, hypothesis testing was undertaken utilizing IBM SPSS AMOS 24.0. Confirmatory factor analysis (CFA) was initially performed to derive estimates for the measurement model, while path analysis was subsequently employed to examine the structural model.

4.1. Measurement Model

In assessing measurement model results utilizing SEM, the fit indices they have revealed a satisfactory fit to the data ($\chi 2((568), N=468) =1049.49$, $p<0.01$, CMIN/df=1.848, CFI=0.932, TLI=0.924, IFI=0.933, RMSEA=0.043, SRMR=0.06). Although the chi-square test indicated significance, other fit indices demonstrated a reasonable fit. Together, these indices suggested that the model adequately represents the relationships between the observed variables and the latent constructs within the proposed theoretical framework (Hu and Bentler, 1999; Kline, 2016).

The measurement model demonstrated strong validity and reliability, as evidenced by the robustness of its composite reliability (CR) values, which ranged from 0.782

to 0.883. These values comfortably surpassed the recommended threshold of 0.7 (Nunnally, 1978).

Table 2. Measurement Model Results

Construct	Item	Loading	CR	AVE
Humor				
Affiliative Humor	I usually don't laugh or joke around much with other people. (R)	0.702	0.869	0.526
	I rarely make other people laugh by telling funny stories about myself. (R)	0.701		
	I usually don't like to tell jokes or amuse people. (R)	0.777		
	I enjoy making people laugh.	0.718		
	I don't often joke around with my friends. (R)	0.795		
	I usually can't think of witty things to say when I'm with other people. (R)	0.649		
Aggressive Humor	If someone makes a mistake, I will often tease them about it.	0.796	0.813	0.523
	When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it.	0.699		
	I do not like it when people use humor as a way of criticizing or putting someone down. (R)	0.730		
	Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation.	0.820		
	I never participate in laughing at others even if all my friends are doing it. (R)	0.652		
	Even if something is really funny to me, I will not laugh or joke about it if someone will be offended. (R)	0.679		
Self-Defeating Humor	I let people laugh at me or make fun at my expense more than I should.	0.670	0.862	0.511
	I will often get carried away in putting myself down if it makes my family or friends laugh.	0.760		
	I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults.	0.672		
	I often go overboard in putting myself down when I am making jokes or trying to be funny.	0.756		
	When I am with friends or family, I often seem to be the one that other people make fun of or joke about.	0.711		
	Letting others laugh at me is my way of keeping my friends and family in good spirits.	0.714		
Self-Enhancing Humor	If I am feeling depressed, I can usually cheer myself up with humor.	0.751	0.883	0.521
	Even when I'm by myself, I'm often amused by the absurdities of life.	0.679		
	If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.	0.809		
	My humorous outlook on life keeps me from getting overly upset or depressed about things.	0.729		
	If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.	0.773		
	It is my experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems.	0.645		
	I don't need to be with other people to feel amused -I can usually find things to laugh about even when I'm by myself.	0.649		
Dark Triad Personality Traits				
Narcissism	I have used deceit or lied to get my way.	0.674	0.800	0.502
	I tend to manipulate others to get my way.	0.749		
	I have used flattery to get my way.	0.784		
	I tend to exploit others towards my own end.	0.777		
Machiavellianism	I tend to want others to admire me.	0.797	0.834	0.558
	I tend to want others to pay attention to me.	0.735		
	I tend to expect special favors from others.	0.649		
	I tend to seek prestige or status.	0.642		
Psychopathy	I tend to be callous or insensitive.	0.715	0.782	0.545
	I tend to not be too concerned with morality or the morality of my actions.	0.716		
	I tend to be cynical.	0.781		

The Average Variance Extracted (AVE) values, which range between 0.502 and 0.558, are above the recommended threshold of 0.5 established by Fornell and Larcker (1981). The constructs in the measurement model have sufficient internal consistency and convergent validity. Additionally, all items of the multi-item constructs show strong factor loadings above 0.642, indicating their significant contribution to their respective latent constructs (Hair et al., 2010).

The Maximum Shared Variance (MSV) values, which range from 0.103 to 0.506, are lower than the AVE for each construct, confirming the model's discriminant

validity. Furthermore, the correlations between all constructs are less than the square roots of their respective AVE values, further supporting discriminant validity.

Table 3. Correlations and Maximum Shared Variances

	Skewness	Kurtosis	MSV	1	2	3	4	5	6	7
1. Affiliative Humor	-0.818	0.324	0.103	0.725*						
2. Aggressive Humor	0.750	0.238	0.506	0.126	0.723*					
3. Self-Defeating Humor	0.434	-0.273	0.299	0.126	0.547	0.715*				
4. Self-Enhancing Humor	-0.127	-0.428	0.103	0.321	0.130	0.288	0.722*			
5. Narcissism	-0.209	-0.371	0.193	0.298	0.220	0.276	0.172	0.709*		
6. Machiavellianism	1.020	0.295	0.371	0.043	0.516	0.221	0.111	0.439	0.747*	
7. Psychopathy	1.320	1.762	0.506	-0.037	0.711	0.302	0.165	0.126	0.609	0.738*

**: Diagonal values are square root of AVEs*

4.2. Structural Model

The structural model illustrated the hypothesized relationships between dark triad personality traits as Narc, Mach, Psy and various humor styles. The model fit indices indicated an acceptable fit to the data ($\chi 2((578), N=468)=1132.57$, $p<0.01$, CMIN/df=1.959, CFI=0.903, TLI=0.898, IFI=0.904, RMSEA=0.045). The overall model fit suggested that the hypothesized relationships between dark personality traits and humor styles are reasonably supported by the data.

Table 4. Structural Model Results

	Estimate	Std. Error	Std. Estimate	t-value	p-value
Narcissism ➔ Affiliative Humor	0.250	0.05	0.301	5.039	<0.001
Narcissism ➔Aggressive Humor	0.097	0.041	0.137	2.326	0.02
Narcissism ➔ Self-Defeating Humor	0.326	0.071	0.321	4.619	<0.001
Narcissism ➔ Self-Enhancing Humor	0.111	0.037	0.174	3.022	0.003
Psychopathy ➔ Affiliative Humor	ns	-	-	-	>0.05
Psychopathy ➔ Aggressive Humor	0.465	0.058	0.741	7.984	<0.001
Psychopathy ➔ Self-Defeating Humor	0.409	0.079	0.453	5.153	<0.001
Psychopathy ➔ Self-Enhancing Humor	0.084	0.032	0.149	2.615	0.009
Machiavellianism ➔ Affiliative Humor	ns	-	-	-	>0.05
Machiavellianism ➔ Aggressive Humor	ns	-	-	-	>0.05
Machiavellianism ➔ Self-Defeating Humor	-0.213	0.099	-0.194	-2.145	0.032
Machiavellianism ➔ Self-Enhancing Humor	ns	-	-	-	>0.05

Notably, Narc exhibits significant positive effects on AFH ($\beta=0.301$, $p<0.001$), AGH ($\beta=0.137$, $p=0.02$), SDH ($\beta=0.321$, $p<0.001$), and SEH ($\beta=0.174$, $p=0.003$), suggesting that elevated levels of Narc are correlated with greater expression of all humor styles.

Similarly, Psy demonstrates significant positive effects on AGH ($\beta=0.741$, $p<0.001$), SDH ($\beta=0.453$, $p<0.001$), and SEH ($\beta=0.149$, $p=0.009$), indicating that higher levels of Psy are associated with heightened expression of these humor

styles. Conversely, the effect of Psy on AFH was not statistically significant ($p>0.05$).

In contrast, Mach exhibits a significant negative effect on SDH ($\beta=-0.213$, $p=0.032$), implying that higher levels of Mach are associated with decreased expression of SDH style. Conversely, the effects of Mach on other humor styles were not statistically significant ($p>0.05$).

These findings provide insight regarding to the impact of dark personality traits on humor styles, elucidating how individuals with varying levels of Psy, Mach and Narc, may express humor in different ways.

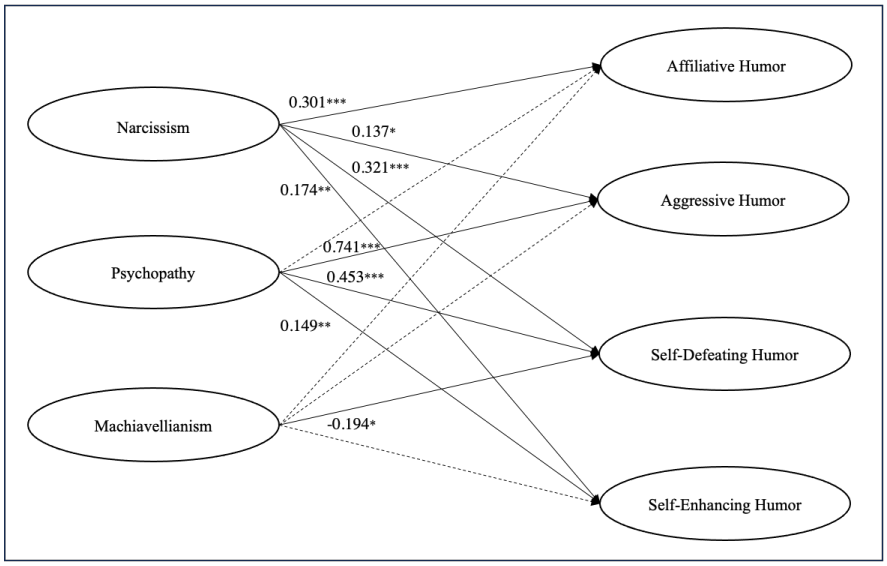


Figure 2. Path Model Results

5. Conclusion and Discussion

This research explored the connections between Dark Triad characteristics and four different humor styles. Also, effect of Narc on SEH is examined in particular since previous studies reported conflicting findings.

Findings reveal that:

- Narc positively influences all types of humor,
- Psy positively influences SDH, AGH and SEH humor styles,
- Mach negatively influences SDH.

The effects found between Narc and positive humor styles were expected considering trait level correlations (extraversion, openness). AFH enables interactions with others, sharing friendly jokes, reducing stress which can be used for increasing popularity, obtaining social approval, self-affirmation, heightening self-esteem by building relationships. Taking results into consideration it can be suggested that AFH can be used as a part of narcissistic strategies in pursuit of attracting attention. It is also found that Narc has an effect on AGH which is in line

with the literature (Martin et al., 2012). The first explanation for the link is related to the tendency to exercise negative humor by teasing, sarcasm, and ridiculing others to satisfy grandiosity and superiority needs. This form of ego promotion and self-preservation has been reported in previous studies (Reidy et al., 2008; Stucke and Sporer, 2002). The second explanation is that the unstable and vulnerable nature of Narc could be causing the positive outlook of the concept to disappear, especially under ego-threatening situations, inducing to resort to aggressive strategies (Sedikides et al., 2004; Stucke and Sporer, 2002). The effect of Narc on SDH is unexpected. Although concepts are related through common negative association with agreeableness; self-love, self-importance and grandiose aspects of Narc separates the concept from SDH decisively. Despite of the fact, there are several studies reported correlations between Narc and SDH before (Besser and Zeigler-Hill, 2011; Garcia et. al., 2024; Zeigler-Hill and Besser, 2011; Lobbestael and Freund, 2021). One explanation is that to satisfy the tendency towards obtaining social attention, narcissists could expose themselves to embarrassing situations in extreme cases (Torres-Marin et al., 2022). On the other hand, considering that trait narcissism can be categorized into grandiose and vulnerable narcissism (Cain, Pincus, and Ansell, 2008; Wright and Edershile, 2018) and grandiose narcissism is explained by self-assured, dominant, manipulative behaviors (Fanslau et. al., 2023) while vulnerable narcissism is characterized by worrying and defensive orientations (Sedikides, 2021), there may be an alternative assertion. It is possible that the relationship between Narc and SDH is originated from the vulnerable, self-critical and low self-esteem aspects of Narc which are suggested to underlie behind the grandiose image presented by them (Jordan et al., 2003; Young et al., 2003). This begs the question if the use of SDH is related to fragile facets of Narc. One other explanation could be that vulnerable and grandiose-superior nature of Narc might induce narcissists to engage in ego-promoting behaviors even such behaviors are self-destructive (Jones and Paulhus, 2014; Vazire and Funder, 2006). In this case another question arises: can ego depletion lead such behaviors that impair the satisfaction of narcissistic needs? While the literature reports both significant and insignificant effects of Narc on SEH (Martin et al., 2012; Veselka et al., 2010), our findings show a positive effect of Narc on SEH as hypothesized. One way to explain this result is to emphasize the connection between constructs through openness and extraversion at trait level. Another explanation could be that Narc is linked to optimism, self-esteem, and less intense emotional reactions to negative life events, just as SEH (Hickman et al., 1996; Zuckerman and O'Loughlin, 2009). SEH functions as a coping mechanism when facing stressful situations or adversaries of life. Above qualities presents not only a natural fit to SEH but operational and functional support to application of it as well.

Psy has an effect on negative humor styles as predicted. Constructs can relate to each other through higher and lower-order personality correlates such as low consciousness and agreeableness they share (Martin et al., 2012; Vernon et al., 2008; Vernon et al., 2009). The effect of Psy on AGH was found to be relatively strong. Psy is related to impulsivity, lack of empathy and respect for others as well as hostile and bullying behaviors. The link between AGH and Psy can be

established through two layers: First, impulsive nature of Psy without concern for the effects on others and deficit in emotional functions indicate that using sarcasm, teasing, put downs, harming or threatening to harm by using aggressive humor for personal gain are useful for the ones with high psychopathic tendencies. Second, "keeping others in line" by using bullying, hostile, disparaging jokes, threatening to lower their status by exposing such treatment is a way of obtaining obedience that may satisfy psychopathic needs (Seibert et al., 2011; Williams et al., 2007). The effect of Psy on SDH is also in line with the previous studies. The finding suggests that SDH can efficiently be used to ingratiate oneself with others (Martin et al., 2012; Veselka et al., 2010). Psy has found to have a positive effect on SEH which was not expected. Considering such characteristics of Psy as strong self-concept, emotional detachment, callousness (Jones and Paulhus, 2014, Paulhus and Williams, 2002), exhibiting "laughing-at" humor by using irony, cynicism and sarcasm (Diogni et al., 2022; Torres-Marin et al., 2022) can asserted to be an effective operationalization of distancing self from stress by adopting a humorous perspective at the expense of others. Another important finding is the lack of Psy's effect on AFH. This is also in line with the literature indicating that the core purpose of AFH (amusing others for facilitating relationships) contradicts the impulsive, anti-social nature of Psy and behavioral tendencies that are disrespectful and non-empathetic for others.

Findings haven't shown significant effects of Mach on SEH and AFH in line with the literature (Martin et al., 2012; Veselka et al., 2010). Although the effect of Mach on AGH is hypothesized, results showed otherwise. The lack of expected effect can indicate tendencies to avoid reputation damage and adopt more socially accepted, subtle ways of controlling and manipulating others (Diogni et al., 2022). One other explanation is related to the regulatory effect of superior impulse control and cognitive abilities of people high in Mach (Bereczkei, 2018) that restrain them resorting to harming, hostile use of humor. The negative effect of Mach on SDH is also unexpected. Considering the cynical view of human nature and pessimistic outlook that characterize the concept (Martin et al., 2003; Martin et al., 2012), it can be asserted that Mach is diminishing the use of disparaging humor toward themselves.

Our findings contribute to the literature by providing evidence regarding to the effects of dark triad on humor styles as well as expanding the current knowledge regarding to the connection between Narc and SEH. The study also has practical implications. Since Psy has found to effect negative humor styles, exhibiting pranks, sarcasm or teasing especially in business context could function as signals to detect masked dark tendencies. On the other hand, Narc's effect on all humor styles, especially a relatively higher effect on SDH, can be observed particularly to reveal negative intentions and manipulative use of the concept.

This study has several limitations. First, the research design is causal. Future studies should investigate the interrelations between dark triad traits and humor styles using different research designs and techniques. Second, this study modelled the effects of the dark triads on humor styles. Further research examining different personality

traits effects such as light triad or dark tetrad on humor styles with more diverse samples to increase generalizability of the results can provide different and broadening perspectives to the literature.

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