

The Dark Triad in Faces: The Influence of Personality Characteristics and Gender on Perceived Attractiveness

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Abstract

The study examines the predictive significance of the presence of subclinical narcissism, Machiavellianism, and psychopathy (Dark Triad) on preferences for faces characterised by high (or low) levels of the Dark Triad traits. Additionally, it investigates the effect of gender and separately explores preferences for male and female faces. Through the assessment of male and female facial composites that represent high and low levels of narcissism, Machiavellianism, and psychopathy, by utilizing the Short Dark Triad Questionnaire, the possible influence of gender and Dark Triad trait levels on the evaluation of the attractiveness of a composite is analysed. Binary logistic regression analysis revealed that the presence of one of the personality characteristics in the evaluator only has an impact on the assessment of facial attractiveness in the case of Machiavellianism – the higher the level of Machiavellianism exhibited by the evaluator, the higher the likelihood that they will rate a female face that exhibits high levels of Machiavellian features as attractive. The evaluator's gender also specifically influences the assessment of the attractiveness of Machiavellianism and psychopathy, but only for female facial composites – if a male subject is asked to evaluate female faces with Machiavellian or psychopathic traits, it is highly likely that he will find them to be unattractive.

Keywords: attractiveness, face, gender, Dark Triad, personality

1. Introduction

There has been extensive research into the attractiveness of human faces and the current state of knowledge has presented several significant findings. Among the frequently observed features that demonstrably enhance the attractiveness of a human face are attributes such as symmetry (Jones et al., 2007; Little et al., 2008), averageness (Little et al., 2012), features of sexual dimorphism (Bannister et al., 2022), or neoteny (Foos & Clark, 2011). In addition to these characteristics that primarily signal the biological qualities of the individual, such as fertility (Jasienska et al., 2006), resistance to pathogens (Møller, 1997), developmental stability (Gangestad, 2022), immune system quality (Jones & Jaeger, 2019), longevity (Reither et al., 2009), as well as mental health (Shackelford & Larsen, 1997), an attractive

face is also associated with traits that indicate the presence of desirable personality characteristics in the individual. Research in this field has highlighted the attractiveness of extraversion (Penton-Voak et al., 2006), friendliness (Meier et al., 2010), trustworthiness (Lee et al., 2017), and honesty (Niimi & Goto, 2023).

Besides the attractiveness of desirable and prosocial characteristics, the question of attractiveness (or aversion) toward risky and undesirable personality traits also arises. In this context, the Dark Triad traits become particularly significant. These traits represent a combination of subclinical narcissism, Machiavellianism, and psychopathy. The common denominator of all three of these traits is predatory, malevolent, and even antisocial behaviour (Paulhus & Williams, 2002). Specifically, Machiavellianism represents the propensity for the cold, selfish manipulation and exploitation of others; narcissism entails an excessively positive self-image associated with exhibitionism and a need for validation of one's exceptionalism by others; and psychopathy expresses general antisocial behaviour, maliciousness toward others and society, a low level of empathy, as well as a propensity for boredom and risk-taking (Heretik Jr. et al., 2018). The subclinical nature of all three traits indicates that they have not been clinically diagnosed or treated (Diller et al., 2021).

Research focused on the attractiveness of Dark Triad traits is scarce and has not yielded consistent results. Considering the characteristics of narcissism, Machiavellianism, and psychopathy, it would be natural to expect that individuals would tend to avoid those who exhibit these traits and judge faces that display these characteristics to be unattractive. Some studies partially confirmed this assumption (Solomon & Lyons, 2020), but others pointed to the paradoxical attractiveness of Machiavellianism, narcissism, and psychopathy (Carter et al., 2014). However, some authors found no significant relationship between facial attractiveness and the presence of Dark Triad traits (Holtzman & Strube, 2013).

Scientific discussions regarding ambiguous results related to the attractiveness of personality characteristics present in facial composites have drawn attention to several potential influential factors. They range from age (Palumbo et al., 2017), the gender of the evaluator (Carter et al., 2014; Li & Liu, 2021) and even to the gender of the evaluated face

(Hoss et al., 2005). In particular, the context of intersexual relationships (i.e., assessing the attractiveness of an individual in the context of evaluating them as a potential mate) can significantly modify the preferences of the evaluator. It appears that the preference (attractiveness) for most characteristics arises from evolutionarily conditioned mechanisms for the selection of suitable partners (for further details, see, for example, Miller & Todd, 1998; Little & Perrett, 2007), which are mainly applicable in intersexual interactions. Another important variable that influences preferences is the personality of the evaluator (see, for example, Selecka, 2017; Birkás et al., 2018). In this context, it is possible that narcissism, Machiavellianism, or psychopathy, present to varying degrees in the evaluator, may modify their preferences for narcissistic, Machiavellian, or psychopathic faces. On one hand, individuals with pronounced Dark Triad traits may exhibit an increased degree of sympathy towards faces that present these characteristics (finding them to be more attractive). On the other hand, the opposite mechanism may also come into play – the tendency for individuals with Dark Triad traits to seek and prefer submissive, easily manipulated individuals (those with lower levels of Dark Triad traits) so they are able to more easily apply the behavioural patterns associated with these specific traits. In this case, they would prefer (consider more attractive) facial composites with low levels of narcissism, Machiavellianism, and psychopathy.

2. Problem

Studies that have analysed the attractiveness of faces with Dark Triad traits have not yielded unequivocal findings and continue to explore the potential influence of intervening variables. The evaluation of another person's facial attractiveness can be influenced by the gender of the evaluator and the face under evaluation, as well as the personality characteristics of the evaluator, among other factors. Our research aims to uncover the potential impact of the presence of Dark Triad personality traits (specifically narcissism, Machiavellianism, and psychopathy) on the assessment of the attractiveness of these traits (i.e., narcissism, Machiavellianism, and psychopathy) in facial composites. Since the assessment of the attractiveness of another person's face is influenced by the context of intersexual relationships, the analyses will be conducted separately for male and female facial composites. The gender of the evaluator will also be examined as a potential factor, in conjunction with personality traits.

3. Research Questions

Given the absence of prior research in this area, we employed an exploratory design and formulated the following research questions:

RQ1: Do the levels of narcissism and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of narcissism?

RQ2: Do the levels of Machiavellianism and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of Machiavellianism?

RQ3: Does the level of psychopathy and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of psychopathy?

4. Method

4.1 Procedure

The data collection took place in two phases. The first group of participants were undergraduate psychology students at the university. They completed the questionnaire as part of a course focused on participation in research projects. In the second phase of the study, additional participants were recruited by the students, and data collection continued via the snowball sampling method. Participants in the second phase were recruited through personal connections and contacted by email, where they were provided with basic information about the research. After they had consented to participate, a link to an online questionnaire was sent to them by the students. Data collection took place using the Survio platform. This data collection method combines the advantages of an anonymous questionnaire (online format with data collection on an external platform) and controlled data collection (the students approached participants they knew).

4.2 Subjects

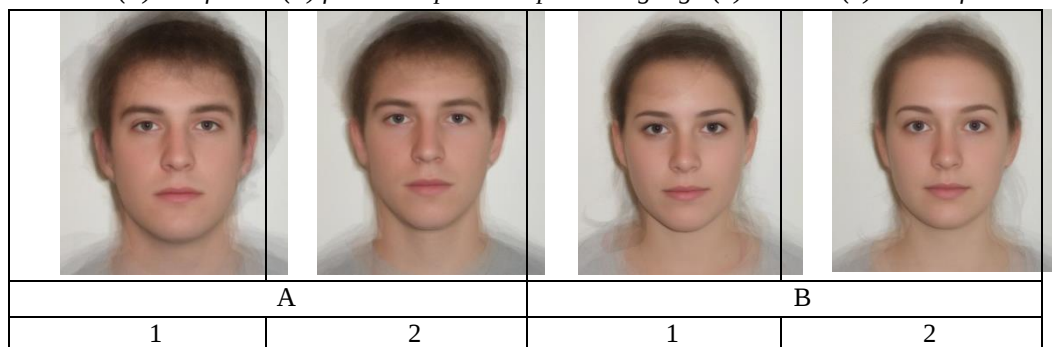
The research sample was made up of 832 participants from 15 to 80 years old ($M = 37.10$ years; $SD = 16.411$); 61.4 % ($N = 511$) were female.

4.3 Instruments

The questionnaire was made up of three parts. In the introduction, the participants were informed of the purpose of the research and were given the opportunity to withdraw at any stage without any consequences.

The second part of the questionnaire presented participants with facial composites of men and women (for an example, see Figure 1) that represented high and low levels of narcissism, Machiavellianism, and psychopathy.

Figure 1: Male (A) and female (B) facial composites representing high (1) and low (2) levels of narcissism



Note: Reprinted with the permission of the author

Source: Holtzman (2018)

For each pair of composites (male and female) and each Dark Triad characteristic (i.e., high and low narcissism, high and low Machiavellianism, and high and low psychopathy), participants were requested to indicate which face they found to be more attractive. Facial composites were utilised, with the author's permission, from the publicly accessible Faceaurus database (Holtzman, 2018). The procedure for creating facial prototypes is as maybe found in Holtzman (2011); however, in essence they are created with data obtained about an individual's personality from a sufficient number of participants (e.g., through a personality questionnaire) while, at the same time, their facial features are captured using specialised computer programs. From the database, individuals with high and low levels of the observed characteristic are selected based on objective measurements of personality traits (e.g., through questionnaires), and the facial features associated with high and low levels of the desired characteristic are identified. Subsequently, through specialised computer graphics programmes, faces are manipulated to create "prototypes" – composites that represent the face of an individual with a high level of the desired characteristic and one of an individual with a low level of the desired characteristic. Since the program modifies the same base face to provide the two composites, the only difference between the two faces is the degree of the presence of the facial features that represent the desired characteristic (in our case, for one set of composites, narcissism; for another, Machiavellianism; and for the third, psychopathy). This procedure can be defined as a quasi-experimental research design (there is no control

group in a true sense), as the variables (factors) on the stimulus side (human faces) are controlled (i.e., identical faces), and the only variable that is manipulated is the degree to which the desired characteristic is present. Any differences in the assessment of the attractiveness of the two faces can thus be directly attributed to the degree of the chosen variable by which they differ.

The third part of the questionnaire included the Short Dark Triad (SD3) questionnaire, that measures subclinical levels of narcissism, Machiavellianism, and psychopathy (see Jones & Paulhus, 2014) in the research sample. Each of the three traits is assessed by the participants through nine statements, to which they express their agreement or disagreement on a five-point scale. For each of the three Dark Triad characteristics, participants can score in between 5 and 45 points.

4.4 Data Analysis

The data was processed using the IBM Statistical Package for the Social Sciences (SPSS), version 28. Binary logistic regression analysis was employed to determine the influence of the level of personality trait (narcissism, Machiavellianism, and psychopathy) and gender (independent variables) on the assessment of the attractiveness of narcissism, Machiavellianism, and psychopathy (dependent variables) present in facial composites. To assess the strength of the effect, Cox & Snell R² and Nagelkerke R² values were utilized.

5. Results

Tables 1 and 2 present the basic information on the presence of the personality characteristics (narcissism, Machiavellianism, and psychopathy) (Table 1) and an evaluation of the attractiveness of male and female facial composites with traits of narcissism, Machiavellianism, and psychopathy (Table 2) among the men and women in the research sample.

Table 1. Average values for Short Dark Triad in men and women

Gender	Narcissism	Machiavellianism	Psychopathy
Male	26.10	29.07	23.30
Female	23.55	26.52	19.81
Total	24.53	27.51	21.16

Source: Authors

Table 2: The frequency of choice of attractive male and female facial composites within narcissism, Machiavellianism, and psychopathy

Attractiveness of the male facial composite						
Gender	Narcissism (N/%)		Machiavellianism (N/%)		Psychopathy (N/%)	
	Low	High	Low	High	Low	High
Male	176/54.8	145/45.2	99/30.8	222/69.2	130/40.5	191/59.5
Female	306/60	204/40	166/32.5	344/67.5	224/43.9	286/56.1
Total	482/58	349/42	265/31.9	566/68.1	354/42.6	477/57.4
Attractiveness of the female facial composite						
Gender	Narcissism (N/%)		Machiavellianism (N/%)		Psychopathy (N/%)	
	Low	High	Low	High	Low	High
Male	151/47	170/53	111/34.6	210/65.4	160/49.8	161/50.2
Female	274/53.7	236/46.3	233/45.7	277/54.3	293/57.5	217/42.5
Total	425/51.1	406/48.9	344/41.4	487/58.6	453/54.5	378/45.5

Source: Authors

Considering the frequencies stated in the Table 2 it seems that, except for the preference for male Machiavellianism, the choice of attractive facial composite does not show any significant preference for either high or low levels of the presented characteristic.

5.1 Research Question 1

Research Question 1 seeks to determine whether the level of narcissism and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of narcissism. The results of the binary logistic regression analysis (see Table 3) demonstrate that neither the level of narcissism of the evaluator nor their gender influences the assessment of the attractiveness of narcissism in the face. This holds true for both female and male facial composites.

Table 4. Results of binary logistic regression analysis examining the influence of gender and narcissism on the assessment of the attractiveness of narcissism in male and female faces

Attractiveness of a male face with high levels of narcissism						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Narcissism	-.024	.014	2.677	1	.102	.977
Gender (male)	-.273	.149	3.348	1	.067	.761
Constant	.424	.393	1.161	1	.281	1.528
Attractiveness of a female face with high levels of narcissism						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Narcissism	.005	.014	.106	1	.745	1.005
Gender (male)	-.256	.147	3.021	1	.082	.774
Constant	-.002	.387	.000	1	.996	.998

Source: Authors

5.2 Research Question 2

Research Question 2 focuses on whether the level of Machiavellianism and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of Machiavellianism. The results of the binary logistic regression analysis (see Table 5) show that while the assessment of the attractiveness of Machiavellianism in male faces is not influenced by gender ($p = 0.750$) or the level of Machiavellianism ($p = 0.434$) of the evaluator. However, in female faces, a statistically significant influence of gender ($p = 0.020$) and especially the evaluator's Machiavellianism ($p < 0.001$) can be observed. It holds that the higher the evaluator's score for Machiavellianism, the higher the likelihood that they will rate the female facial composite with high Machiavellianism as attractive ($B = 0.011$). Additionally, the male gender negatively predicts for the attractiveness of the female facial composite with high Machiavellianism ($B = -0.050$). However, this model only correctly predicts facial preference (attractiveness) in 58.7 % of cases, and the size of the effect is small (Cox & Snell $R^2 = 0.025$; Nagelkerke $R^2 = 0.034$).

Table 5. Results of the binary logistic regression analysis examining the influence of gender and Machiavellianism on the assessment of the attractiveness of Machiavellianism in male and female faces

Attractiveness of a male face with high levels of Machiavellianism						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Machiavellianism	.011	.014	.612	1	.434	1.011
Gender (male)	-.050	.158	.102	1	.750	.951
Constant	.481	.434	1.227	1	.268	1.617
Attractiveness of a female face with high levels of Machiavellianism						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Machiavellianism	.046	.014	10.989	1	<.001	1.047
Gender (male)	-.353	.152	5.426	1	.020	.702
Constant	-.696	.417	2.787	1	.095	.498

Source: Authors

5.3 Research Question 3

Research Question 3 investigates whether the level of psychopathy and the gender of the evaluator predict the attractiveness of facial composites with high/low levels of psychopathy. The results of the binary logistic regression analysis (see Table 6) indicate that the psychopathy score does not influence the assessment of the attractiveness of either male or female facial composites. Gender is a significant predictor ($p < 0.024$), but only in the evaluation of female faces. If the evaluator is male, the likelihood that he will find a woman with high levels of psychopathic facial features attractive is significantly lower ($B = -0.107$). Correctly predicting preferences for a female face with psychopathic features is possible in 53.4 % of cases. The size of the effect in the observed results was small (Cox & Snell $R^2 = 0.006$; Nagelkerke $R^2 = 0.008$).

Table 6. Results of the binary logistic regression analysis examining the influence of gender and psychopathy on the assessment of attractiveness of psychopathy in male and female faces

Attractiveness of a male face with high levels of psychopathy						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Psychopathy	.009	.015	.402	1	.526	1.010
Gender (male)	-.107	.154	.490	1	.484	.898
Constant	.164	.366	.201	1	.654	1.178
Attractiveness of a female face with high levels of psychopathy						
Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Psychopathy	-.010	.015	.489	1	.484	.990
Gender (male)	-.343	.152	5.063	1	.024	.710
Constant	.248	.363	.466	1	.495	1.281

Source: Authors

6. Discussion

The results of the regression analyses indicate that in the majority of the observed cases, neither the level of Dark Triad traits nor the gender of the evaluator serve as predictors of the influence of the presence of features of narcissism, Machiavellianism, or psychopathy on the evaluation of facial attractiveness. This conclusion is universally true for male faces, signifying that the evaluator's level of narcissism, Machiavellianism, and psychopathy do not play a role in the assessment of the attractiveness of men. Similarly, whether the evaluator is male or female does not impact the assessment of the attractiveness of men when evaluating narcissism, Machiavellianism, or psychopathy. Consequently, the evaluation of the Dark Triad traits in male faces remains consistent across gender and the personality characteristics of the evaluators; men or women, as well as individuals irrespective of their personality traits, assess facial attractiveness in a similar manner. From this data, it can be inferred that factors other than the presence of narcissism, Machiavellianism, or psychopathy personality traits have a decisive influence on the attractiveness of Dark Triad traits in male facial composites. In this context, it is considered, for instance, that the attractiveness of Dark Triad traits may be

attributed to the fact that many of the characteristics of Machiavellianism and psychopathy (e.g., aggressiveness, low anxiety, higher risk-taking, impulsivity, a tendency to control others, avoidance of commitments) (Hare, 1985; Dahling et al., 2009; Brewer & Abell, 2017; Pechorro et al., 2020) match those dominant behaviours and attitudes that are regarded as desirable masculine attributes. In this sense, the Dark Triad traits represent more of an evolutionary advantage (preferred by women and respected and admired by men) than an interpersonal threat. Thus, the perception of their attractiveness is more influenced by an assessment of the benefits of these characteristics (evolutionary significance for survival) than a perception of their risks (e.g., for harmonious interpersonal relationships). Biological significance may, therefore, override social consequences, which is most commonly applicable to short-term relationships (Stower et al., 2020) and those focused on reproductive success.

Within the results of the analyses regarding the influence of the Dark Triad traits and gender on the evaluation of the attractiveness of faces we observed an exception in those situations where the attractiveness of a female face was assessed, specifically with traits of Machiavellianism and psychopathy. When assessing the attractiveness of Machiavellianism in a female face, it is noteworthy that the presence of Machiavellian traits in the evaluator increases the perception of the attractiveness of the female face. Additionally, a Machiavellian female face is more likely to be considered to be attractive when evaluated by a female assessor; men tend to perceive Machiavellian female faces as unattractive. This finding can be interpreted in the light of the persistent societal tendency to perceive women as more submissive, especially when they assert their own interests in interactions with others (see, for example, Amanatullah et al., 2010). Since Machiavellianism is characterised by the pursuit of personal gain and the acquisition of power (Bereczkei, 2017), these forms of behaviour are not considered to be "typically feminine" by society and disrupt the expected/desirable image of women. Consequently, if Machiavellian traits are evident in a female face, they may diminish its attractiveness. However, the negative correlation between male gender and the attractiveness of Machiavellianism in a female face may also be driven by the opposite process; the tendency of women to positively evaluate female faces with Machiavellian traits. Given that women may not easily or directly assert their interests in interactions, they are more likely to employ indirect and "subtle" means. Machiavellianism, as a tendency to manipulate others, mislead men, or indirectly gain benefits (Christie & Geis, 1970), may be perceived as a successful female strategy for the advancement of their interests, and as such, it may be appreciated by other women as the effective use of "female weapons" to achieve their goals in a masculine environment. The positive correlation and influence of the presence of Machiavellian traits in the evaluator's personality with the attractiveness of a Machiavellian female face can be interpreted similarly, if the individual schemes in a Machiavellian way, they may have few qualms and may not view them as being as unethical as by an individual with lower levels of this trait. Consequently, they may not negatively assess their presence in others; on the contrary, they are likely to appreciate them,

which may subsequently have a positive impact on the assessment of the attractiveness of a face with Machiavellian traits.

As for the attractiveness of psychopathy, only the influence of gender on the attractiveness of a female facial composite with psychopathic traits was confirmed. Similar to Machiavellianism, psychopathic traits in women are considered to be unattractive by men. Psychopaths are typically characterised by a lack of empathy (Heretik Jr. et al., 2018), untrustworthiness and indifference to others, and may have significant difficulties in

maintaining successful interpersonal relationships (Morf & Rhodewalt, 2001). These personality characteristics pose significant risks to the successful existence of an interpersonal relationship. These characteristics are particularly risky within romantic relationships, which are then reflected in the gender-specific aversions.

In the interpretation of the effects of the studied variables on the assessment of the attractiveness of faces that display narcissism, Machiavellianism, or psychopathy, it is essential to not only consider the statistical significance of the results obtained, but also their practical significance. In those cases where the influence of a personality trait (Machiavellianism) on the evaluation of the attractiveness of a female face was confirmed, as well as where the impact of gender on the attractiveness of female faces displaying Machiavellian or psychopathic traits was identified, the size of the effect (assessed through Cox & Snell R^2 and Nagelkerke R^2 values) was small. Overall, it can be concluded that, in the majority of cases, the presence of Dark Triad traits and the gender of the evaluator do not influence the evaluation of the attractiveness of faces that display Dark Triad characteristics, and in the exceptional cases where a relationship was confirmed, it had a very minor effect.

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