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Capítulo 2

A critical review of the association between facial features and narcissism¹

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Abstract

Whether facial information constitutes a valid cue for inferring personality remains a matter of academic debate. Contradictory findings suggest that the debate on the predictive validity of faces should shift from dichotomous conceptions to more detailed approaches, focusing on the specific conditions under which facial cues reveal personality traits. This documentary analysis examines the most striking findings on facial perception of narcissism, with the aim to provide a critical interpretation and rigorous synthesis of the evidence. Our analysis suggests that narcissism is the trait of the Dark Triad that is most detectable from the face. We address the possible psychological mechanisms underlying this association, as well as the role of methodological artifacts that could influence the obtained effects. We propose a dominance-based explanation for this association that could explain some of the existing controversies in the literature. We conclude that the association between facial features and narcissism should be interpreted with caution, given its important consequences.

Keywords

Narcissism; Face; Facial perception; Personality; Cognition; Dark Triad.

Introduction

Since ancient times, folk psychology has embraced the idea that facial features signal personality traits (Jaeger et al., 2025). While physiognomic beliefs have been widely discredited as pseudoscience (Todorov et al., 2017), some studies have reopened the debate on whether the face can function as a reliable source for inferring personality traits in specific contexts (Masui et al., 2024). Therefore, determining whether the face functions as a reliable indicator of personality is a central question in research on face perception. Furthermore, the question of which types of personality traits are most likely to be accurately perceived and through which mechanisms still require further investigation. Considering the important theoretical and applied implications of these questions, this article seeks to contribute to the debate on the validity of personality inferences based on facial appearance, focusing its analysis on the Dark Triad traits (narcissism, Machiavellianism, and psychopathy). It examines whether certain facial indicators can be consistently associated with levels of narcissism, reviewing the available empirical evidence and exploring possible explanatory mechanisms that support these findings.

Method

Through documentary analysis, this study critically reviews and synthesizes the most striking findings on the relationship between narcissism and facial perception. We focus on narcissism for two reasons. First, narcissists are likely to be superficially pleasing, as they often display socially attractive attributes such as a neat appearance, confidence, and charisma (Holtzman & Strube, 2012). However, positive first impressions often precede negative interpersonal interactions, which may entails a social cost (Back et al., 2010). This peculiarity justifies the need to rigorously examine the validity of possible mechanisms for

early detection of this type of trait. Second, the state of the art suggests that narcissism is the trait of the Dark Triad that is most detectable from the face (Giacomin & Rule, 2019). This finding suggests that a deeper understanding of the mechanisms underlying facial perception of narcissism could shed light on why the face may be more predictive of certain personality traits.

The article is structured into three sections. Firstly, we discuss some relevant aspects of social inferences from faces. However, we do not aim to conduct an exhaustive review of the extensive literature on face perception research, since several reviews have been conducted on this topic (Todorov et al., 2015). Secondly, we address the debate over whether facial information can be considered a valid cue for personality traits, with an emphasis on facial inferences from the Dark Triad traits. Finally, we analyze the case of facial perception of narcissism, with the aim of identifying possible mechanisms and methodological factors that may play a role in this association.

Results and Discussion

Social inferences from facial features

When meeting a stranger, the first impression is formed from all available information (Olivera-La Rosa et al., 2023). Several studies suggest that the face is the most complex social stimulus, playing a central role in person perception. Both faces and stimuli with facial configuration tend to primarily capture visual attention (Todorov et al., 2015), which suggests the existence of specific attentional mechanisms oriented toward this type of stimuli. This sensitivity could be supported by innate predispositions, observable from birth and even during intrauterine life (Ronga et al., 2025). Consistent with this attentional speciali-

zation, it has been shown that the extraction of social information from faces, including the formation of immediate judgments, constitutes an automatic and integral process of social perception (Bar et al., 2006).

Several explanations have been proposed for this evaluative mechanism. From an evolutionary perspective, the cost of making a quick but mistaken response would be lower than that of conducting a thorough evaluation before acting, particularly in contexts where rapid decision-making is critical for survival (Schaller & Park, 2011). In other words, the ability to quickly detect a stranger's intentions may have represented a crucial adaptive advantage by reducing the high costs associated with potentially unfavorable social interactions (Olivera-La Rosa et al., 2024).

Complementing this explanation, it has been proposed that the primacy of social inferences from faces is due to factors related to cognitive economy and the subjective perception of validity. Indeed, people tend to trust that these intuitive judgments derived from faces possess a certain diagnostic validity (Jaeger et al., 2025). As mentioned above, the face easily captures attention, a process that usually occurs quickly and frequently does not require intentionality (Bar et al., 2006). This accessibility facilitates the occurrence of global inferences that are consistent with the evaluation of the face ("halo effect", Kahneman, 2011).

Certainly, the sensitivity of social inferences to facial evaluations has been widely documented. The relationship between facial attractiveness and the trustworthiness attributed to an individual has been shown to be particularly close (Ma et al., 2016). The positive bias toward attractive faces has been shown to be persistent, with relevant consequences in different domains of social interaction (Langlois et al., 2000). However, the effects of facial appearance are not limited to attractive faces. A negative bias has been observed towards faces considered unattractive (Griffin & Langlois, 2006), "creepy" (Olivera-La Rosa et al., 2021) or those that present facial anomalies (Jamrozik et al., 2019). The impact of social inferences from facial traits appears to be context-sensitive

(Todorov et al., 2015). Faces perceived as competent or dominant have been shown to have a positive impact on voting intention or success in a military career (Olivola & Todorov, 2010; Olivola et al., 2014).

Is the face a valid source for inferring personality?

It is striking that, on average, social inferences from faces show a high degree of consensus within each cultural context (Todorov et al., 2015; Young, 2021). Indeed, faces seem to be read in a similar way: while some people are mostly perceived as trustworthy, others are perceived as aggressive, among other illustrative cases. This regularity is reflected in the homogeneity observed in the normative values of different databases on social evaluations of faces (Ma et al., 2015).

However, it is worth asking whether intracultural consistency in social inferences derived from the face implies that facial features are valid indicators of certain personality traits. To address this question, it is pertinent to consider the distinction proposed by Carbon (2013) between perceived traits—those attributed based on facial characteristics—and actual traits—those that effectively characterize the person. While the former tends to show intracultural consistency (Haroun et al., 2023), the literature offers mixed views on the ability of the face to infer real traits.

On the one hand, several studies suggest that personality inferences derived from faces show limited accuracy (Ames et al., 2009; Jaeger et al., 2024). Todorov and colleagues (2015) argue that questionable methodological decisions have contributed to overestimating the diagnostic validity of these inferences in some studies (for a similar position, see Bovet et al., 2022; Jaeger et al., 2024). For instance, when evaluating the possibility of inferring the political affiliation of an unknown person, they observed that facial information offered less diagnostic value than obvious demographic indicators. Along these lines, they argue that using 50% accuracy (random level) as a criterion for judging the

reliability of inferences is uninformative regarding their true predictive power. Likewise, attributions made about an individual seem to vary significantly depending on the image used, to the point that intra-person variation would be comparable to variation between different targets (Jenkins et al., 2011).

From this perspective, inferences about personality traits derived from the face are considered a bias in evaluative judgments (Jaeger et al., 2024). Although the available evidence is still limited, people appear to overestimate their own ability to make accurate inferences from the face (“meta-accuracy”) (Ames et al., 2009; Jaeger et al., 2024; Jaeger et al., 2025; Todorov et al., 2015).

On the other hand, some studies suggest that the face can be a valid source of social inferences in certain contexts (Carré et al., 2009; Giacomini & Rule, 2019; Holtzman, 2011; Shiramizu et al., 2019). In other words, facial features would function as a nonverbal signal capable of conveying certain psychological information. Naumann and colleagues (2009) found that personality can be manifested through different aspects of appearance and that viewers use physical cues to estimate certain traits with relative accuracy. Indirect evidence suggests that, based on brief fragments of behavior (thin slicing), observers can make relatively accurate judgments about socioeconomic status, academic achievement, or suitability as a teammate (Kraus & Keltner, 2009; Kaczmarek et al., 2018). It should be emphasized, however, that these findings are based on inferences derived from subtle behavioral patterns, rather than facial features in the strict sense.

Interestingly, some personality traits seem to be more detectable from the face than others. Within the Big Five model, inferences about extraversion, that is, how open and sociable a person seems, often exhibit higher accuracy (Naumann et al., 2009; Nestler and Back, 2013; although see Ames et al., 2009). In contrast, the validity of the face in predicting the remaining traits—openness to experience, agreeableness, neuroticism, and conscientiousness—has shown more inconsistent results (Naumann et al., 2009). Alper et al. (2021)

found that agreeableness and conscientiousness could be judged with greater than random accuracy, while extraversion in men, neuroticism, and openness to experience yielded accuracy levels even lower than random.

Similarly, some evidence suggests that the facial width-to-height ratio (fWHR), a sexually dimorphic marker, is associated with aggressive behavior in men (Carré et al., 2009). According to the authors, this index could be a sign of a predisposition to aggression with a possible adaptive value. However, subsequent research has questioned the robustness and replicability of these findings (Deaner et al., 2012).

Some recent studies suggest that certain traits of the Dark Triad—narcissism, Machiavellianism, and psychopathy—can be inferred, sometimes with greater accuracy than chance, from facial photographs (Alper et al., 2021; Shiramizu et al., 2019). For example, Masui et al. (2024) found that participants could identify these three traits in female faces, but not in male faces. Similarly, Holtzman (2011) and Alper et al. (2021) showed that even in neutral faces, these traits can be perceived, especially in women and in diverse cultural contexts. However, other studies have only partially replicated these findings. For instance, Shiramizu et al. (2019) found that narcissism tends to be detected more consistently, while Machiavellianism and psychopathy yield more inconsistent results.

Crucially, although the perception of the Dark Triad from faces has been documented, the inconsistencies observed suggest that methodological aspects may be decisive in calibrating the strength of the links between personality and facial appearance (Bovet et al., 2022; Haroun et al., 2023; Shiramizu et al., 2019). Although certain patterns have been identified—the highest predictive value for inferences of narcissism (Alper et al., 2021; Giacomin & Jordan, 2019; Giacomin & Rule, 2019; Holtzman, 2011; Shiramizu et al., 2019)—the state of the art reflects the complexity of the phenomenon and shifts the debate toward the conditions under which the face can be a valid source of information, rather than the dichotomous question of whether or not it is a valid source for inferring

personality. Understanding which factors enhance or limit this ability is key to avoiding simplistic interpretations that overestimate the strength of the findings. The following section delves deeper into the analysis of this premise, emphasizing the case of inferences of narcissism.

Case analysis: Inferring narcissism from facial features

Some researchers have proposed that certain particularities of narcissism provide theoretical support for its observable expression in narcissistic appearance (Rode et al., 2022; Vazire et al., 2008). Narcissism is widely considered part of the Dark Triad (Furnham et al., 2013), characterized by a grandiose sense of self, a tendency to be egotistical, self-focused and vain; displaying feelings of superiority, selfishness, lower empathy, higher sensation seeking and a greater need for status and power (Burgmer et al., 2021; Giacomini & Rule, 2019; Grapsas et al., 2020; Jones & Paulhus, 2010). This construct is usually understood on a continuum that ranges from adaptive manifestations, linked to self-esteem and motivation, to pathological forms that impair social interaction (Cain et al., 2008). Therefore, while narcissism has been conceived as a stable and maladaptive trait characteristic of a personality disorder (American Psychiatric Association, 2013), other authors have highlighted that narcissism as a subclinical personality trait can include functional expressions that favor emotional regulation and the search for achievements (Miller et al., 2007).

Beyond these theoretical differences, a common thread is the persistent search for external validation and the projection of status. Consistent with this characterization, people with high levels of narcissism (hereinafter, “narcissists”) tend to resort to a stylized and carefully crafted appearance designed to increase their attractiveness, using visual elements that facilitate their perceptual recognition (Back et al., 2010; Vazire et al., 2008).

Now, is narcissism detectable from unintentionally crafted signals? To address this issue, it is pertinent to mention the distinction between natural (unmanipulated) signals and manipulated signals. Indeed, it seems reasonable to expect that an appearance intentionally crafted to seek validation and project status would be associated with narcissistic traits by observers, which would facilitate their early identification in social interaction. However, the hypothesis of the natural attractiveness of narcissists has shown inconsistent results (Weber et al., 2021). Even so, some studies suggest that narcissism can be detected from the face (Alper et al., 2021; Giacomini & Jordan, 2019; Giacomini & Rule, 2019; Holtzman, 2011; Medlin et al., 2020; Shiramizu et al., 2019; although see Haroun et al., 2023). Along these lines, Giacomini and Rule (2019) found that, when isolating the facial features involved, judgments of narcissism depend mainly on the eyebrows. According to the authors, distinctive eyebrows (thick and dense) could constitute a relevant biological signal of grandiose narcissism, regardless of their manipulation for decorative purposes.

The predictive value of the face—and particularly the eyebrows—for inferences of narcissism constitutes an explanatory challenge. Several hypotheses, not necessarily mutually exclusive, have been proposed to understand the mechanisms involved in this evaluative pattern. On the one hand, Holtzman (2011) suggested that the traits of the Dark Triad could involve both psychosocial and morphological characteristics, forming, in other words, a physical phenotype. This perspective maintains that psychological and physical traits would be inherited together as a result of shared evolutionary pressures. In support of this hypothesis, it has been documented that grandiose narcissism has a hereditary factor (Jang et al., 1996), which opens the possibility that narcissists naturally exhibit distinctive eyebrows (Giacomini & Rule, 2019).

Alternatively, it has been suggested that the formation of certain personality traits could be explained, at least in part, as a reaction to a person's physical traits; that is, the social perception of physical appearance would modulate personality development (Todorov et al., 2015; Zebrowitz et al., 1998). For instance, individuals with faces perceived as trustworthy would tend to behave

in a manner consistent with that perception by internalizing the expectations of their environment, generating self-fulfilling prophecies (Slepian & Ames, 2015). Consequently, the observed correspondence between certain facial features and narcissism could be understood not as a direct reflection of biology, but as a consequence mediated by facial characteristics and associated social responses (Giacomin & Rule, 2019; Holtzman & Strube, 2011).

From a neuropsychanalytic perspective, psychological and biological processes are understood as interconnected rather than independent dimensions of human functioning (Yovell et al., 2015). Thus, the association between facial appearance and narcissistic traits may reflect the interaction between neural, social, and psychological factors over time.

Some authors argue that perceptually inferring antisocial traits could constitute an evolutionarily adaptive response, insofar as it would reduce the likelihood of engaging in dangerous social interactions (Alper et al., 2021). This proposal is aligned with the evolutionary explanation of the heuristic mechanisms of social perception, which prioritize minimizing the costs associated with potentially unfavorable interactions (Schaller & Park, 2011). Although theoretically plausible, this hypothesis is difficult to reconcile with evidence showing that narcissism is more easily inferred than more “dangerous” traits, such as psychopathy (Haroun et al., 2023).

One aspect that deserves special attention is the role of perceived dominance in inferences about Dark Triad traits—and narcissism in particular—given the close relationship between the two constructs (Bradlee & Emmons, 1992; Holtzman & Strube, 2011; Jones & Paulhus, 2011). In the interpersonal circumplex model (Wiggins, 1979), these traits are located in the quadrant characterized by high agency (orientation toward advancing, excelling) and low communion (orientation toward relating, getting along). Individuals in this space of the circumplex tend to describe themselves as calculating, arrogant, insensitive, and manipulative (Jones & Paulhus, 2011). It has even been pointed out that the conceptual overlap between dominance and the traits of the Dark

Triad can introduce terminological difficulties, compromising the specificity with which the effects reported in the literature are interpreted (Holtzman & Strube, 2011).

In this context, the assumed theoretical association between dominance and narcissism contrasts with certain debatable methodological aspects in empirical studies. Indeed, there is limited control of the perception of dominance as an independent variable, making it difficult to calibrate whether the results are explained by facial characteristics specifically linked to narcissism or, rather, by a general effect of perceived dominance. Further, a recurring methodology consists of using prototypical faces that represent significant individual differences (e.g., high and low in narcissism) and assessing whether participants are able to identify these traits at the perceptual level (Alper et al., 2021; Holtzman & Strube, 2011; Medlin et al., 2020; Shiramizu et al., 2019). However, it has been argued that this strategy reduces the external validity of the findings, given that prototypes are often generated from a small and unrepresentative set of faces, which limits the generalizability of the conclusions (Bovet et al., 2022).

Such methodological weaknesses are even more relevant when analyzing the potential role of perceived dominance in the observed gender differences. The available evidence indicates that Dark Triad traits are more easily inferred in female faces than in male faces (Holtzman, 2011; Masui et al., 2024; Medlin et al., 2020). Some authors suggest that female faces may reflect more observable indicators of personality than male faces; however, this explanation remains tentative and requires further empirical support (Masui et al., 2024). An alternative hypothesis is that the perception of dominance is more salient and distinctive in female faces, thus facilitating the inference of associated traits, such as narcissism. This proposal is consistent with the strong association between dominance and masculine appearance (Martin & Slepian, 2021; Oosterhof & Todorov, 2008). Similarly, it has been documented that the perception of competence—closely linked to dominance—is accentuated in female faces with masculine features (Walker & Wänke, 2017).

Conclusions and future directions

The reviewed evidence suggests that narcissism is the trait of the Dark Triad most susceptible to being detected from faces. Although this finding has been replicated in different studies, there are methodological aspects that could influence the replicability of the effect. In this regard, future research should incorporate different types of facial stimuli to mitigate the incidence of methodological artifacts on the validity of the findings. It is also necessary to explore more rigorously the potential role of the perception of dominance in the effects found. Although this explanation has been considered in the literature, a more rigorous empirical approach is needed.

This review is not without limitations. While there is growing interest in empirically addressing the association between facial features and Dark Triad traits, the studies conducted to date are limited, which compromises the robustness of the conclusions. It is important to clarify that the purpose of this article is not to offer an exhaustive review of the research carried out in social perception, as previous works have addressed this aspect (Todorov et al., 2015; Todorov, 2017). Additionally, it should be noted that in the studies examined, the variable “narcissism” refers mainly to subclinical grandiose narcissism, rather than vulnerable narcissism, narcissistic personality disorder, or pathological forms of narcissism (for a review of the multifactorial construct of narcissism, see Miller et al., 2021).

In this context, this article aims to encourage further research that empirically addresses these issues. We expect to contribute to raising awareness in the academic community of the importance of further study of the facial perception of Dark Triad traits, given the serious implications of this field of study. Although early identification of these traits in social interactions may have adaptive value (Giacomin & Rule, 2019), we believe that the findings to date should be interpreted with extreme caution in order to avoid false positives and the corresponding social stigmas.

In this sense, a better understanding of how facial perception of personality works can have direct implications in professional settings. For example, in the legal/forensic field, several studies have documented that facial characteristics influence the perception of guilt in defendants (Olivera-La Rosa et al., 2024). These results contrast with the low level of awareness that judges tend to have about the influence of implicit biases on legal decisions (Kirshenbaum & Miller, 2021). Therefore, a better understanding of how facial perception of Dark Triad traits works and its predictive value is of particular interest in this field. In the organizational field, research on facial perception of narcissism can facilitate the design of less biased selection processes. This is especially relevant, given the close relationship between the perception of narcissism and qualities valued in the professional sphere, such as leadership, self-esteem, and motivation (Cain et al., 2008). In recent years, the construct of CEO narcissism has attracted the attention of leadership research, showing that narcissistic CEOs tend to exhibit an ambitious and innovative leadership style, but at the same time, they often generate interpersonal tensions and disengagement among employees (Li et al., 2025).

Research on facial perception of Dark Triad traits may also have a positive impact on clinical and psychodiagnostics practice. On the one hand, greater awareness of how these associations work may reduce their potential influence on diagnoses. On the other hand, the development of new research in this area may contribute to gauging the feasibility of integrating facial perception as complementary evidence that allows for the development of more robust assessment protocols. While the state of the art advises against taking such measures, it is up to future studies to evaluate the feasibility of developing evidence-based protocols that incorporate facial information.

Future studies should incorporate complementary approaches that allow us to better understand understudied aspects of facial perception of narcissism, such as the inclusion of implicit measures to study the automatic component of these associations. For example, implicit measures can be used to assess

associations between faces with different characteristics and dark personality traits. Along these lines, future research should address the susceptibility of facial perception of narcissism to specific contexts. Research on learning and memory has shown that repeated experiences can produce lasting neural changes through synaptic plasticity mechanisms (Faria, 2020). Incorporating neurobiological approaches into the study of facial perception of narcissism may therefore contribute to a better understanding of how social experiences and repeated interpersonal interactions shape personality-related evaluations over time. Finally, there is evidence that the perception of affective expressions incongruent with social expectations (e.g., smiling at a fatal accident) could activate the perception of antisocial behavior (Olivera-La Rosa et al., 2021). The influence of affective expressions on the facial perception of narcissism and the context in which that perception occurs is an aspect to be addressed in future research.

Author Contribution Statements

Antonio Olivera-La Rosa: Conceptualization, Investigation, Methodology, Project administration, Supervision, Writing—original draft, Writing—review & editing.

Estefanny Acevedo Correa: Conceptualization, Investigation, Methodology, Writing—original draft.

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