Perceived trustworthiness is associated with position in a corporate hierarchy

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ABSTRACT

Faces provide cues about an individual's social, economic, and reproductive success. Here we examined the relationship between perceived trustworthiness, dominance, attractiveness, and position within a corporate hierarchy in mid- to top-level managers. Position in a hierarchy was operationalized as the difference in the number of subordinates and superiors controlling for firm size. It did not correlate with perceived attractiveness and dominance but was positively correlated with perceived trustworthiness. Geometric morphometrics revealed facial features associated with the perception of trustworthiness. When facial shape was tested against corporate position we found no statistically significant effect. The facial width-to-height ratio, a metric previously shown to be correlated with traits such as dominance and (decreased) trustworthiness, was unrelated to the managers' position in the corporate hierarchy. Implications and limitations are discussed.

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1. Introduction

The association between social success and facial appearance is a widely discussed topic. Previous research shows that the physical appearance of leaders influences election outcomes (Hall, Goren, Chaiken, & Todorov, 2009; Little, Burriss, Jones, & Roberts, 2007; Olivola & Todorov, 2010). CEOs whose faces look more competent, dominant, and mature are employed within companies that tend to be more profitable (Rule & Ambady, 2008). Competent look is priced into CEO compensation more than attractive appearance (Graham, Harvey, & Puri, 2014). Based on this evidence, it was not clear whether more successful companies select CEOs with particular appearance or whether individuals with a competent appearance tend to be more effective CEOs. People rate large-firm (i.e., higher sales revenue) CEOs as more competent-looking than small-firm CEOs, suggesting that competent-looking CEOs are primarily selected and employed by companies that were already more profitable (Graham et al., 2014).

First impressions of social traits such as attractiveness, trustworthiness, and dominance were shown to be reliable even when perceived from highly variable images and their consequences for social encounters are well-evidenced (Todorov, Olivola, Dotsch, & Mende-Siedlecki, 2015; Vernon, Sutherland, Young, & Hartley, 2014). Attractiveness is associated with perception of several desirable characteristics such as

trustworthiness, intelligence, competence, and health (Eagly, Ashmore, Makhijani, & Longo, 1991; Kleisner, Kočnar, Rubešová, & Flegr, 2010; Todorov et al., 2015). Moreover, more attractive individuals are treated more positively (Langlois et al., 2000) and have higher mating success (Barber, 1995; Jokela, 2009; Rhodes, Simmons, & Peters, 2005), and stronger possibility to achieve higher social status (Anderson, John, Keltner, & Kring, 2001; Langlois et al., 2000).

Perceived trustworthiness may also play an important role in successor CEO selection (Gomulya, Wong, Ormiston, & Boeker, 2015). Facial shape analysis showed that perceived trustworthiness correlates with perceived happiness while untrustworthy faces are considered to be angrier (Kleisner, Priplatova, Frost, & Flegr, 2013; Todorov, 2008). Trustworthiness based on facial appearance affects the decision to approach or avoid the target (Oosterhof & Todorov, 2008, 2009) and is correlated negatively with perceived dominance but positively with attractiveness (Kleisner et al., 2013).

Dominant-looking animals and human beings may have an advantage moving up within status hierarchies (Mazur, 2005). In humans, dominant appearance seems to be especially important in male societies such as armed forces but its importance for corporate societies is questionable. The facial dominance of West Point cadets was positively correlated with their military rank in early and late careers (Mazur, Mazur, & Keating, 1984; Mueller & Mazur, 1996). Facial dominance may have special significance in the context of leader–follower relations: For instance, people prefer dominant leaders especially under group-related human (as opposed to non-human) threats and to the extent that they hold a conservative political ideology. However, when

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looking for a friend, people prefer those that are not dominant, irrespective of ideology or social environment (Laustsen & Petersen, 2015).

The facial width-to-height ratio (fWHR) is a morphological trait associated with a wide array of features such as self- and other-perceived dominance, anti-social behaviour, perceived aggressiveness, actual aggression, physical performance, and reproductive success (Carré & McCormick, 2008; Carré, McCormick, & Mondloch, 2009; Lefevre & Lewis, 2014; Loehr & O'Hara, 2013; Mileva, Cowan, Cobey, Knowles, & Little, 2014; Stirrat & Perrett, 2010; Tsujimura & Banissy, 2013; Třebický, Havlíček, Roberts, Little, & Kleisner, 2013). Companies headed by CEOs with relatively wider faces attain superior financial performance particularly within firms whose leadership teams demonstrated lower cognitive complexity (Wong, Ormiston, & Haselhuhn, 2011). Men with broader (vs. narrower) faces were more likely to exploit their counterparts' trust in economic games and players were more likely to entrust their money to males with longer and narrower faces (Stirrat & Perrett, 2010). Lower fWHR tends to be associated with higher perceived trustworthiness and lower perceived dominance.

Most of the studies on social rank perception were carried out on styled photographs (election photos, cadet yearbooks, etc.), which are usually highly variable in features such as head position, smile, and gaze direction. This makes the measurement of static facial traits complicated and may also significantly influence the overall perception of target characteristics. Therefore, the current study was conducted in the corporate environment with male CEOs controlling for variation in facial features.

First impressions about a stranger frequently influence future interactions with the person and are strongly affected by physical appearance (Uleman & Saribay, 2012). Previous research suggests that higher attractiveness and competence might distinguish business leaders from leaders in other domains such as an army and sports (Olivola, Eubanks, & Lovelace, 2014). In modern, fast-moving societies with project-oriented employment careers, individuals often change their social environments, collaborators, and sub- and super-ordinates. Every change brings the risk of being rejected by the new environment, especially when trying to dominate individuals in an already established hierarchy. Also, individuals acting as superiors inevitably engage in risk-taking behaviour such as delegation of responsibility, sharing organizational plans, and inviting others' involvement in critical decisions.

In the current study, we tested the connection between achieved position within a corporate structure and perceived facial dominance, trustworthiness, and attractiveness. If corporate hierarchies are driven by individuals' struggle for success (because higher position gives access to more resources) and if the mentioned characteristics are linked to social success, then one of these characteristics or their combination should influence an individual's position within a corporate hierarchy. We suggest that perceived trustworthiness is one of the most favoured characteristics in personnel promotion in corporations, especially when choosing an employee/collaborator from an unknown group of people. We hypothesize that attractive and trustworthy-looking men might be more successful (i.e., more likely to rise up) within a corporate hierarchy. While it is possible that facial dominance plays a similar role in corporations, based on the extant literature (e.g., Mazur et al., 1984), we argue that dominance should be preferred more strongly within military societies than corporations. In the current study, we focus exclusively on the corporate domain and predict that perceived trustworthiness, compared to dominance, should play a greater role in predicting a male's likelihood of rising within a corporate hierarchy. We used geometric morphometrics and fWHR measurement to determine facial traits associated with perceptual dimensions that might affect the position in a corporate hierarchy.

2. Methods

2.1. Photographs

We took photographs of 48 male managers (mean age = 40.35, $SD = 6.95$, range: 25–59) from the Czech Republic on occasion of CEO

Golf Tour and by individual meetings. All managers were employees of different companies. Models were instructed to assume neutral expressions and to avoid any face decorations. Portrait photographs were taken by a Nikon D80 camera. All photos were cropped so that the eyes were horizontally at the same height and a standard length of neck was visible. The background colour was changed into grey using Adobe Photoshop 6.0. Each photographed man was instructed to report his age, number of superiors, number of subordinates, and total number of employees in their company. The number of subordinates is the number of employees inferior to the superordinate for which he has a direct responsibility (in the case of CEO all of the company's employees were considered as subordinates). The number of superiors is the number of hierarchical levels above the level of an employee (not the total number of superordinate employees at all superordinate levels). All personal data and firm specifications were anonymized.

2.2. Rating of photographs

One hundred and eighty-seven (109 females) university students, aged 21.75 years on average, $SD = 2.12$, range = 19–37 (females: $M = 21.6$, $SD = 2.45$, range: 19–37; males: $M = 22$, $SD = 1.36$, range: 19–27), were invited to volunteer to judge the photographs on trustworthiness, attractiveness, and dominance. Photos were rated for trustworthiness by 47 males and 77 females and a separate group of 31 males and 32 females rated the photos for dominance. A week later the same group of 31 males and 32 females judged photos for attractiveness. Each person rated the whole set of 48 photos, one at a time, for one of the characteristics on a scale from 1 (very untrustworthy/submissive/unattractive) to 7 (very trustworthy/dominant/attractive) without time limits. Raters saw images on a liquid crystal screen with 1280×1024 pixel resolution.

2.3. Facial width-to-height ratio

Photos of 48 managers were measured by means of the Image J software. Using the same methodology as in previous studies (Carré & McCormick, 2008; Třebický et al., 2014), we measured the distance between the upper lip and brow (height of upper face) and between left and right cheekbones (bizygomatic width). fWHR was calculated as width divided by height. All distances were measured twice to assess measurement reliability. Reliability was high for all measures: distance between left and right cheekbones ($r = 0.936$, $p < 0.001$); distance between the upper lip and brow ($r = 0.935$, $p < 0.001$); and the width-to-height ratio ($r = 0.901$, $p < 0.001$).

2.4. Statistics

The correlations between perceived trustworthiness, dominance, attractiveness, fWHR, and position in occupational hierarchy were measured by Pearson's correlation coefficient. The ratings of all photographs by one rater were converted to z-scores to eliminate the influence of individual differences between raters, and each of perceptual characteristics was calculated for each photo as its average z-score. The position in occupational hierarchy ($M = 51.83$, $SD = 82.33$, range = 5–510) was operationalized as the difference in the number of subordinates and superordinates statistically controlling for firm size (total number of employees). Inter-rater reliability of attractiveness, dominance, and trustworthiness ratings was measured by Cronbach's alpha.

2.5. Geometric morphometrics

Photographs of 48 males were analysed by geometric morphometrics to investigate variability in face shape associated with perception of trustworthiness. The 60 landmarks (including 24 semilandmarks) were digitized in tpsDig2 software, ver. 2.14 (Rohlf, 2009a). Landmarks are represented as points that are anatomically (or at least