A Meta-Analytic Review of the Associations of Personality, Intelligence, and Physical Size with Social Status

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Abstract

Theories have proposed diverse reasons for why individual differences such as personality traits lead to social status attainment in face-to-face groups. We integrated these different theoretical standpoints into a model with four paths from individual differences to status: a dominance, a competence, a virtue, and a micropolitics path. To investigate these paths, we meta-analyzed over 100 years of research on bivariate associations of personality traits, cognitive abilities, and physical size with the attainment of status related outcomes in face-to-face groups (1,064 effects from 276 samples including 56,153 participants). The status related outcome variables were admiring respect, social influence, popularity (i.e., being liked by others), leadership emergence, and a mixture outcome variable. The meta-analytic correlations we found were largely in line with the micropolitics path, tentatively in line with the competence and virtue paths, and only partly in line with the dominance path. These findings suggest that status attainment depends on the competence and virtue of an individual but also on how individuals can enhance their apparent competence or virtue by behaving assertively, by being extraverted, or through self-monitoring. We also investigated how the relations between individual differences and status related outcomes were moderated by kind of status related outcome, nature of the group task, culture (collectivism/individualism), and length of acquaintance. The moderation analysis yielded mixed and inconclusive results. The review ends with directions for research such as the need to separately assess and study the different status related outcomes.

Keywords: social influence; prestige; sociometric status; individual differences; cognitive ability

Public Significance Statement: This meta-analysis investigated who attains social status in face-to-face groups. Social status was frequently attained not only by competent and virtuous individuals but also by individuals who enhance their appearance of competence or virtue by behaving in assertive, extraverted, and socially appropriate ways. These findings

underline the need to not take competence or virtue of those high in social status for granted

and to implement evidence-based selection procedures when it comes to deciding whom to

put into superordinate social positions.

A Meta-Analytic Review of the Associations of Personality, Intelligence, and Physical Size with Social Status

Social status is the extent to which a person receives admiring respect and voluntary deference from others in a group (e.g., Anderson et al., 2015; Cheng et al., 2013). *Admiring respect* refers to admiration and respect that is contingent upon apparent qualities of the person such as competencies that are beneficial for the group. This conditional form of respect is different from unconditional respect that is given to all human beings due to a belief in the inherent dignity of all humans. *Voluntary deference* refers to the voluntary compliance of others with a person's wishes, desires, and suggestions (Anderson et al., 2015). That is, the person has influence on others without threatening, intimidating, or coercing them. Admiring respect and voluntary deference are sometimes called *informal* social status to distinguish them from *formal* social status such as a person's standing in the formal hierarchy of an organization or socioeconomic status. In the current work, we focus on informal social status. Outcomes related to admiring respect and voluntary deference, such as popularity (i.e., being liked by others) and leadership emergence, are also often studied in the literature on informal social status.

Social status hierarchies can be found across cultures and social contexts, in highly egalitarian small-scale societies of foragers and horticulturalists (e.g., von Rueden, 2014), in groups of college students (e.g., Harms et al., 2007), as well as in organizations, such as consulting firms or engineering departments (Anderson, Spataro, & Flynn, 2008). When and why individuals tend to rank high or low in social status hierarchies has been studied by disciplines within and outside psychology, for example, in social psychology (e.g., Leary et al., 2014), personality psychology (for a review, see Grosz, Leckelt, & Back, 2020), management (e.g., Li et al., 2016), anthropology (e.g., Henrich & Gil-White, 2001), and sociology (e.g., Willer, 2009).

In the 20th century, research on why some people are more likely to attain status in groups than others has been characterized by the debate between dominance theories (i.e., dominant individuals attain status) and functionalist theories (i.e., competent individuals attain status). This debate has been reconciled in three different ways: (a) the dominance–prestige account of hierarchy differentiation (Cheng et al., 2013; Henrich & Gil-White, 2001), (b) the moral virtue theory of status attainment (Bai, 2017; Bai, Ho, & Yan, 2020), and (c) the micropolitics account of status hierarchies (Anderson & Cowan, 2014; Anderson & Kennedy, 2012). Each of these three theories offers a unique solution to the debate between the dominance and functionalist theories of status attainment. Hence, the similarities and differences between the three theories in turn call for a theoretical integration and an empirical evaluation of the relative importance of the different pathways to status attainment proposed by these theories.

Theoretical Synthesis

Dominance and Functionalist Theories of Status Attainment

Dominance theories of status attainment posit that status attainment depends on an individual's willingness and ability to inflict harm. The willingness and ability to inflict harm can be conveyed via stable features such as height and muscle strength and dynamic cues such as expanded and erected posture, assertive facial gestures, physical threats, and a lowered voice pitch (e.g., Blaker & van Vugt, 2014; Cheng et al., 2016; Henrich & Gil-White, 2001). These signals of ability and willingness to use force are believed to lead to status inconspicuously, when others submissively accept a subordinate role, or through nonviolent or violent dominance contests (e.g., staredowns or physical altercations; Anderson & Kennedy, 2012). In line with dominance theories, traits related to the ability or willingness to inflict harm on others, such as height or antagonism, have been found to be associated with the attainment of a high rank in social hierarchies (e.g., Blaker & van Vugt, 2014; Cheng et al., 2013).

Yet, according to a narrative review by Anderson and Kennedy (2012), most past research has refuted dominance theories and their assumption that status attainment depends on an individual's ability and motivation to intimidate others. First, dominant individuals have sometimes been found to be no more influential than nondominant individuals (e.g., Ridgeway & Diekema, 1989; but see also Cheng et al., 2013). Second, people who overestimate their place and unilaterally claim status have been found to be less liked by others and compensated less for their work (Anderson, Ames, & Gosling, 2008; Ridgeway & Diekema, 1989), which suggests that they were also less admired and respected by others. Third, groups tend to assign a higher status to members who contribute to the group's success (a) by exhibiting superior skills and abilities or (b) by exhibiting selflessness and making sacrifices for the group's success (e.g., Hardy & van Vugt, 2006; Willer, 2009). Anderson and Kennedy (2012) concluded that dominance theories cannot fully account why certain individuals tend to attain social status and others not.

Functionalist theories state that individuals attain status when they are instrumental for the group's success (i.e., when they have useful skills and abilities and contribute to the group more than others; e.g., Anderson, Spataro, & Flynn, 2008; Willer, 2009). According to functionalist theories, an individual's status can vary across groups and situations because the tasks and abilities that contribute to a group's success vary across groups and situations. In line with this notion, extraversion, which is positively related to social engagement skills (Soto et al., 2022), was a stronger positive predictor of status in a consulting firm (team-oriented tasks) than in an engineering department (less teamwork, more technical tasks; Anderson, Spataro, & Flynn, 2008). Conscientiousness, which is positively related to self-management skills (Soto et al., 2022), was a stronger positive predictor of status in the engineering department than in the consulting firm (Anderson, Spataro, & Flynn, 2008). Agreeableness (i.e., low antagonism), which is positively related to cooperation skills (Soto et al., 2022), was positively associated with status in previously unacquainted groups of students

after an affiliative group task but not after a competitive group task (Lawless DesJardins et al., 2015).

However, traditional functionalist theories have not been able to explain some findings. For example, traits related to status striving such as the personality trait of dominance are linked to social status in groups even though such traits often do not provide much value to the group (e.g., Anderson & Kilduff, 2009). Moreover, status hierarchies seem to emerge very quickly and remain relatively rigid (e.g., Anderson et al., 2001; Schmid Mast, 2001). Anderson and Kennedy (2012) have argued that such a fast process is in contrast to functionalist theories because (a) it should take some time for group members to get an accurate sense of who will contribute the most to the group's success, and (b) status hierarchies should readily adapt as more information about each member is gathered. In accordance with the notion that it should take time to get an accurate sense of who will contribute the most, the accuracy of trait judgements tends to increase with the level of acquaintance (e.g., Connelly & Ones, 2010; Paulhus & Morgan, 1997; Hofer et al., 2022; Vazire, 2010; but see also Denissen et al., 2011). As a consequence of the limitations of the dominance and functionalist accounts of status hierarchies, several authors have proposed theories that combine elements from the dominance and functionalist theories.

Dominance–Prestige Account of Hierarchy Differentiation

Henrich and Gil-White (2001) and Cheng et al. (2013) proposed and provided evidence for the dominance–prestige account of hierarchy differentiation (see also Maner & Case, 2016). The dominance–prestige account posits that there are two distinct paths to the top of the hierarchy: dominance and prestige.

Physical Size, Antagonism, and Assertiveness Lead to Status via the Dominance Path

On the dominance path, individuals attain a high rank because they are intimidating and coercive, a process that resembles the process posited by dominance theories of status attainment. Traits related to the dominance paths are characterized by intimidation, coercion,

and the willingness or ability to inflict harm on others such as physical size, antagonism, and assertiveness (e.g., Blaker & van Vugt, 2014; Cheng et al., 2010).[1] From the theoretically proposed dominance path, we derived the hypothesis that physical size, antagonism, and assertiveness should be associated with social status.

H1: Dominance-related traits (i.e., physical size, antagonism, and assertiveness) are positively associated with social status attainment.

Cognitive Ability and Extraversion Lead to Status via the Competence Path

On the prestige path of the dominance–prestige account, individuals attain a high rank because they are recognized and respected for skills, success, or knowledge that are instrumental for the group, a process that reflects what the functionalist theories of status attainment would propose. In line with previous work (e.g., Bai, 2017), we call the prestige path "competence path" in the current work. Traits related to the competence path are characterized by competencies that we believe are instrumental for attaining group tasks in all or most group settings such as cognitive abilities and extraversion (for related reviews, see e.g. Grosz, Leckelt, & Back, 2020; Judge et al., 2004). From the theoretically proposed competence path, we derived the hypothesis that cognitive abilities and extraversion should be associated with social status.

H2: Competence-related traits (i.e., cognitive ability and extraversion) are positively associated with social status attainment.

We included extraversion as a competence-related trait because it is related to various social engagement skills (e.g., leadership and conversation skills) that should be instrumental for attaining the group tasks in most if not all group settings (Soto et al., 2022; see also Bono

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[1] Physical size refers to physical characteristics such as height and muscularity. Antagonism refers to personality traits characterized by antagonism, such as psychopathy, antagonistic narcissism, low agreeableness, and low honesty-humility (e.g., Hodson et al. 2018; Lynam & Miller, 2019). Assertiveness refers to personality traits characterized by assertive and self-assured behavior, such as assertive narcissism and the personality trait of dominance. Assertiveness should lead to social status via the dominance path because assertiveness is related to self- and peer-rated dominance (e.g., Cheng et al., 2010).

& Judge, 2004; Do & Minbashian, 2014; Judge et al., 2002; Li et al., 2010; Riggio et al., 2003; Zopiatis & Constanti, 2012). We did not include neuroticism, conscientiousness, openness, and agreeableness (low antagonism) as competence-related traits because, in contrast to extraversion, these traits are related to competencies that we believe are instrumental to the group only in some group settings (for similar arguments and some evidence, see Lawless DesJardins et al., 2015; Anderson, Spataro, & Flynn, 2008; for a list of competencies related to the Big Five, see Soto et al., 2022). For example, agreeableness is related to cooperation skills such as capacity for warmth (Soto et al., 2022). We think capacity for warmth is instrumental for a group (i.e., instrumental for attaining the group task) in settings with affiliative group tasks but not in settings with competitive group tasks such as in a military context (see also Lawless DesJardins et al., 2015). Hence, only for extraversion but for none of the other Big Five, we expected a main effect of extraversion on status that goes through the competence path.

Kind of Status Related Outcome as a Moderator of the Dominance-Status Link

Strictly speaking, the dominance–prestige account focuses on social rank and not on social status per se. Social rank is characterized by attention from others and social influence on others but not necessarily by admiring respect from others (Cheng et al., 2013). These differences are important because some previous studies have suggested that dominance-related traits are associated with social influence and attention (Cheng et al., 2013) but not with admiring respect or popularity (Anderson, Ames, & Gosling, 2008; Cheng et al., 2013; Ridgeway & Diekema, 1989; see also Durkee et al., 2020). Competence-related traits have been found to be related to not only social influence and attention but also admiring respect and popularity (e.g., Cheng et al., 2013). Thus, we expected that the kind of status related outcome (i.e., attention and influence versus admiring respect and popularity) moderates the dominance path but not the competence path.

H3: Dominance-related traits (i.e., physical size, antagonism, and assertiveness) are more strongly positively associated with the attainment of attention and social influence than with the attainment of admiring respect and popularity.

Task Nature as a Moderator of the Competence-Status Link

The nature of the group task should moderate the link between competence-related traits and status attainment. That is, whether a trait and the competence it entails are valued by the group should depend on the instrumentality of the trait for completing core group tasks. Due to time and space constraints, we investigated this proposition only with the following two hypotheses, although the proposition could be investigated regarding many other kinds of task nature and competence-related traits.

H4: The higher the complexity of the group tasks, the more positive is the association between cognitive abilities and status attainment.

H5: The higher the task interdependence of the group tasks (i.e., degree to which group members have to share or exchange information, materials, or expertise to achieve the desired group performance), the more positive is the association between extraversion, which has been found to be positively related to social engagement skills (Soto et al., 2022), and status attainment.

Moral Virtue Theory of Status Attainment

The moral virtue theory (Bai, 2017) proposes that there are not two but three routes to social status: a dominance route, a competence route, and a virtue route. On the virtue route, acts of virtue (e.g., generosity, humility, and loyalty) elicit feelings of warmth and admiration (for virtue) and a willingness to defer to the virtuous actor (e.g., Bai, 2017; Bai, Ho, & Yan, 2020). Acts of virtue are conceptualized as moral acts that go beyond conformity to norms. That is, virtue is not conceptualized by the absence of norm violations but by the unselfish and unconditional upholding of moral ideals and values (Bai, 2017; Bai, Ho, & Liu, 2020; Bai, Ho, & Yan, 2020; see also Janoff-Bulman et al., 2009). For example, traits that are

characterized by altruism (i.e., doing good unselfishly and unconditionally) should lead to status attainment in groups via the virtue path.

Benevolent and Universal Altruism Lead to Status via the Virtue Path

In the current work, we distinguish between two kinds of altruism: benevolent altruism and universal altruism. Benevolent altruism means an unselfish and unconditional upholding of the basic value benevolence (e.g., Sagiv et al., 2017; Schwartz et al., 2012). Benevolence refers to the preservation and enhancement of the welfare of people with whom one is in frequent personal contact. Expressions of benevolent altruism include giving to other ingroup members, sacrificing for them, sharing with them, and helping them. Universal altruism means an unselfish and unconditional upholding of the basic value universalism (e.g., Sagiv et al., 2017; Schwartz et al., 2012). Universalism refers to a commitment and devotion to equality, justice, and protection for all people, a preservation of the natural environment, and an acceptance and understanding of those who are different from oneself. Expressions of universal altruism would be, for example, acting pro-environmentally or donating to poor people outside one's social group. Both benevolent and universal altruism should lead to social status attainment via the virtue path (for supporting evidence, see, e.g., Milinski et al., 2002; Willer, 2009).

H6: Benevolent altruism and universal altruism are positively associated with social status attainment.

Low antagonism is not included in H6 because low antagonism might lack the unselfish and unconditional upholding of moral ideals—the primary characteristic of the virtue path (Bai, 2017; Bai, Ho, & Yan, 2020). Thus, low antagonism per se should be insufficient for gaining status via the virtue path.

Individualistic-Collectivist Culture as a Moderator of the Virtue-Status Link

The culture and subculture of a group shape the virtues endorsed by the group and these endorsements are believed to determine whether traits and their virtuous characteristics

are positively or negatively related to status in the group (Bai, 2017; Bai, Ho, & Yan, 2020; see also Li et al., 2016). Bai argued that generosity is a widely if not universally endorsed virtue in human societies (see also Aknin et al., 2013). Because generosity towards ingroup members is a central aspect of benevolent altruism, we did not expect to find a moderating effect of culture on the association between benevolent altruism and social status. Yet, we expected a moderating effect of culture on the association between universal altruism and status because we believed that virtues other than generosity towards ingroup members are more strongly endorsed by some societies and groups than by others (see also e.g., Bai, 2017; Haidt et al., 1993). Bai (2017) focused in his moral virtue theory on two important cultural forms, individualism–collectivism at the national level and socioeconomic status at the within-nation level. Because studies on social status do not often provide information about the socioeconomic status of their participants, the current work focused exclusively on individualism–collectivism. Bai (2017) argued that people in collectivistic cultures rely more strongly on the moralities of community (e.g., loyalty and humility) and divinity (e.g., purity, chastity, and cleanliness) and less strongly on the morality of autonomy (e.g., rights and being open-minded and critical) than people in individualistic cultures (see also Torelli et al., 2014; Vauclair et al., 2014). The morality of autonomy has been linked to universalism values (Sverdlik et al., 2012). Thus, universal altruism should be more status-enhancing in individualistic than in collectivistic cultures.

H7: The more individualistic a culture is (i.e., the higher the individualism score of a country), the more positive is the association between universal altruism and social status attainment.

Micropolitics Model of Status Hierarchies

The micropolitics model of status hierarchies (Anderson & Cowan, 2014; Anderson & Kennedy, 2012) posits that, in order to attain status, individuals need to convince other group members that they possess the competencies, abilities, and collective mindedness that are

instrumental for the group. Accordingly, status attainment depends not only on the actual instrumental value and virtues of an individual (see competence and virtue paths). Status attainment also depends on how individuals can enhance their *apparent* instrumental value and virtue by behaving in ways that signal high competence, collective mindedness, or virtue to the group (see also Leary et al., 2014).

On the basis of the micropolitics model, we propose an additional fourth path to social status, a path that we will call the *micropolitics path*. The micropolitics path is characterized by behaviors that people use to increase their apparent instrumental value or virtue by (a) feigning competence, collective mindedness, or virtue or (b) advertising their own competence, collective mindedness, or virtues.[2] These behaviors are associated with assertiveness, extraversion, and self-monitoring. Thus, these traits should lead to status via the micropolitics path.

Assertiveness and Extraversion Lead to Status via the Micropolitics Path

Assertive behavior can convey instrumental value to others because assertive behavior signals competence (e.g., Anderson & Kilduff, 2009; Price & Stone, 2004). Importantly and in contrast to the competence path, the display of assertive behavior does not require the individual to actually have competencies and skills that are instrumental for the group. For instance, assertiveness (i.e., assertive narcissism and trait dominance) has repeatedly been linked to self-promotional behavior, making a competent impression on others, and the attainment of social status and popularity even though assertiveness is often not linked to competencies that are relevant for group tasks (e.g., Anderson & Kilduff, 2009; Grapsas et al., 2020; Leckelt et al., 2015; Lord et al., 1986; Zeigler-Hill et al., 2019; but see also Do &

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[2] It could be argued that the micropolitics path is not different form the competence path because individuals who are able to convince other group members of their instrumental value for the group have competencies (e.g., impression management, political, and social skills) that might actually be instrumental for the group. However, on the micropolitics path, these impression management, political, and social skills might lead to status attainment even when they are *not* instrumental for the group (i.e., even when the impression management, political, and social skills do not help to attain group goals). This should not be the case according to functional theories and the competence path.

Minbashian, 2014). Aside from assertiveness, extraversion has been linked to self-promotional behavior, a motivation for prestige and leadership, and persuasive skills (e.g., Back et al., 2011; Kyl-Heku & Buss, 1996; Soto et al., 2022; Suessenbach et al., 2019). Thus, assertiveness and extraversion should lead to status attainment via the micropolitics path.

H8: Assertiveness and extraversion are positively associated with social status attainment.

We included assertiveness and extraversion not only in Hypothesis 8 (micropolitics path) but also in Hypothesis 1 (dominance path) and Hypothesis 2 (competence path), respectively, because a positive association between assertiveness and status might be explained by the dominance or the micropolitics path and a positive association between extraversion and status might be explained by the competence or the micropolitics path. Hence, if we would find a positive association between assertiveness and status or a positive association between extraversion and status, it would not provide unambiguous support for either of the paths. To evaluate evidence for each path, we will thus interpret how several traits are associated with status rather than how an individual trait is associated with status.

Self-Monitoring Leads to Status via the Micropolitics Path

People high in self-monitoring (i.e., people who manage their own behavior and self-presentation in terms of social appropriateness) should be able convince other group members that they are virtuous and thus attain status. This may, for example, be achieved by appearing generous. Research suggests that the overt display of generous and prosocial behavior can signal collective mindedness and thus lead to social status (e.g., Flynn et al. 2006; Hardy & van Vugt, 2006; Willer, 2009). Importantly, studies have suggested that the display of generous and prosocial behavior does not necessarily reflect an unselfish and unconditional upholding of moral ideals. For example, Hardy and van Vugt (2006) found that people behaved more prosocially when their behavior was public than when it was anonymous. On the basis of the micropolitics model, we assume that individuals that signal virtues such as

altruism might attain status even if they are *not* actually virtuous (e.g., altruistic), which should not be the case according to the virtue path. Flynn et al. (2006) found that people high in self-monitoring established a reputation as a generous exchange partner and that this reputation might explain why self-monitoring is positively associated with social status in groups.

H9: Self-monitoring is positively associated with status attainment.

Length of Acquaintance as a Moderator

The emphasis on appearance in the micropolitics model is in line with research emphasizing that individual differences can only have an impact on social status attainment if they are expressed in observable behaviors and if these behaviors are detected and utilized by the other group members (e.g., Back et al., 2018; Grosz, Leckelt, & Back, 2020; Küfner et al., 2013). This line of research has pointed out that the social context evokes, emphasizes, or allows for certain motivations, behaviors, perceptions, or evaluations but not for others. For example, groups of zero and short-term acquaintances (i.e., group members hardly know each other) tend to experience superficial, one-sided, self-presentational interactions that evoke assertive behavior and in which assertive behavior is appreciated (e.g., because it breaks the ice). Thus, assertiveness might be particularly status-enhancing when group members just met each other. Yet, groups of long-term acquaintances (i.e., group members know each other already for some time) tend to experience intimate or controversial interactions in which assertive behavior is not appreciated as much (e.g., Back et al., 2018; Campbell & Campbell, 2009; Leckelt et al., 2015). Thus, assertiveness might not be status-enhancing when group members know each other well. Furthermore, over time, micropolitical behavior might become less effective at increasing apparent instrumental value and virtue. Accordingly, the social status and popularity of extraverted, narcissistic and self-enhancing people who engage in micropolitical behavior have been found to deteriorate over time (e.g., Bendersky & Shah, 2013; Leckelt et al., 2015; Paulhus, 1998). Thus, the effects of assertiveness, extraversion,

and self-monitoring via the micropolitics path might be stronger initially than after the group members spend some time together. Vice versa, the accuracy of judgements by others tend to increase for personality traits (for a meta-analysis, see Connelly & Ones, 2010) and cognitive abilities (e.g., Paulhus & Morgan, 1997; Hofer et al., 2022; Vazire, 2010; but see also Denissen et al., 2011). Thus, people's actual competence and virtue should become more status-enhancing over time.

H10: The shorter the length of acquaintance, the more positive is the association of assertiveness, extraversion, and self-monitoring with status attainment.

H11: Vice versa, the longer the length of acquaintance, the more positive is the association of competence-related traits (i.e., cognitive ability and extraversion) and virtue traits (i.e., benevolent and universal altruism) with status attainment.

We did not hypothesize that the dominance-path is moderated by length of acquaintance because dominance theories entail that the ability and willingness to inflict harm on others lead to status across contexts (e.g., Anderson & Kennedy, 2012). Furthermore, in contrast to the competence path, the micropolitics path should *not* be moderated by the task nature because assertive and extraverted people feign or advertise relevant competencies regardless of the group task. Similarly, in contrast to the virtue path, the micropolitics path should *not* be moderated by culture because, regardless of the culture, self-monitoring people feign or advertise their upholding of moral ideals that are endorsed by the society and group they are in.

Summary of Theoretical Propositions

As displayed in Figure 1, the theoretical literature suggests four paths from personality traits, cognitive abilities, and physical size to social status attainment. According to the dominance path, physical size, antagonism, and assertiveness lead to social status because they intimidate others and are relevant for dominance contests. Via the dominance path, traits should result in the attainment of attention and social influence rather than in the attainment

of admiring respect and popularity. According to the competence path, cognitive abilities and extraversion lead to status attainment because these two traits are characterized by competencies and skills that are instrumental to the group (i.e., help groups fulfill group tasks). The nature of the group task should moderate the competence path because the nature of the group tasks should determine how instrumental certain competencies and skills are. According to the virtue path, benevolent and universal altruism lead to social status because virtuous acts elicit admiration and deference from others. This path should be moderated by the cultural context because a group's culture determines which virtues are endorsed and valued by the group. Finally, according to the micropolitics path, assertiveness, extraversion, and self-monitoring should lead to social status because people high on these traits behave in ways that make them appear competent or virtuous. The micropolitics path, the competence path, and the virtue path should be moderated by length of acquaintance because self-promotional behavior should be more effective in groups of zero and short-term acquaintances than in groups of long-term acquaintances, and actual competence and virtue should be more apparent in groups of long-term acquaintances than in groups of zero and short-term acquaintances.

Method

We put the four paths of status attainment (i.e., Hypotheses 1, 2, 6, 8, and 9; Figure 1 and Table S1 in the supporting material provided on the OSF project page: https://osf.io/mcr2j) to an empirical test by meta-analyzing the bivariate zero-order associations of personality traits, cognitive abilities, and physical size with the attainment of status related outcomes. Furthermore, we meta-analytically investigated the moderating effects of kind of status related outcome, nature of the group task, culture (collectivism/individualism), and length of acquaintance (Hypotheses 3, 4, 5, 7, 10, and 11). To investigate these main and moderating effects, we used multivariate meta-analysis models with multiple endpoints. The endpoints were four status related outcomes (admiring respect,

influence, popularity[3], and leadership emergence[4]) and a *mixture* outcome variable for

outcome measures that assessed more than one status related outcome. As outcome variables,

we included not only core aspects of social status such as admiring respect but also influence,

popularity, and leadership emergence because these outcomes are highly related to social

status and they are sometimes even included in the definition or measurement of social status

(see e.g., Table 1 in Cheng et al., 2013). The original plan was to include another status

related outcome variable: attention. We eventually did not include attention as an outcome in

any of the meta-analytic models because the literature search yielded only one eligible record

with attention as an outcome.

Literature Search

Several literature search strategies were employed to reduce review biases, increase

comprehensiveness, and ensure literature saturation. First, three electronic databases were

searched: Web of Science (indexes: Science Citation Index Expanded; Social Sciences

Citation Index; Arts & Humanities Citation Index), APA PsycINFO, and Google Scholar (for

search terms and queries, see Table S2). Second, Google Scholar was used to search for

publications that cited the eligible publications found in the initial electronic database search.

Third, the reference sections of all eligible publications found in the initial electronic database

search were screened (Table S3). Fourth, the references from similar previous reviews were

screened (e.g., Anderson & Cowan, 2014; Grijalva et al., 2015; Judge et al., 2002; see Table

S3). Fifth, if a study was eligible, but if essential information was not reported in a

publication, the authors were contacted via e-mail (with a maximum of two email attempts)

and asked for the missing information. Whenever authors were contacted, we asked for

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[3] In the current work, we conceptualized popularity as likeability, that is, how much one is liked and accepted by other group members.

[4] Leadership emergence does not refer to formal leadership positions but to informal leadership that does not come with actual authority (e.g., being perceived as the leader of a group or being informally elected to be the leader). Furthermore, following past research (e.g., Judge et al., 2002), we considered leadership emergence to be distinct from leadership ability or leadership effectiveness.

additional published or unpublished studies/data. Sixth, we circulated requests for unpublished studies/data via several list serves, newsletters, forums on websites, or Twitter sites (for details, see Table S4).

Data Management and Selection Process

The literature search results were extracted into the software Citavi (i.e., a program for reference management and knowledge organization). After duplicates were removed, the titles and abstracts yielded by the search were screened against the inclusion and exclusion criteria outlined in Table 1. Each search result was screened by one person. The people who did the screening were not blind to the journal titles or to the study's authors or institutions.

If the title or abstract suggested that a publication was potentially eligible for inclusion, one person obtained and read the full text and then decided whether the publication met the inclusion/exclusion criteria. Whenever the full text could not be accessed online, the full text was requested from the authors. If the authors did not respond or if the e-mail address could not be found online, the publication was not included in the meta-analysis. Borderline cases were handled through discussions, by refining the eligibility criteria, or by seeking additional information from the authors of the primary source via e-mail. A list with all borderline cases and the reasons why we included or excluded each case can be found in Table S5.

Coding Effect Sizes and Moderators

For the coding process, we used a standardized procedure and forms (for details, see Text S1) and a detailed coding manual (see Table S6). The coding manual was inspired by Bosco et al. (2017) and Roberts et al. (2017). Two coders coded all the variables specified in the preregistered coding manual independently from each eligible study except for the information that needed to be identical in order to be able to compare the two codings (i.e., publication ID, authors, year, DOI, publication source, and sample ID). After the start of the coding process, we decided to code some additional information for robustness checks (for

details, see Tables S6 and S7). These additional variables were often only coded by one

person who revisited the included records.

The coders were seven psychology students (working on their Bachelor's or Master's

degrees). To ensure consistency across coders, we conducted calibration exercises with

sample articles. As an indicator of intercoder reliability, we used the *irr* package in R (Gamer

et al., 2019) to calculate the two-way, agreement, average-measures intraclass correlation

coefficient (ICC) for the coded sample sizes (ICC = .98), effect sizes (ICCs = .85 to 1), and

moderating variables (ICCs = .69 to .98; for details, see Table S8). The ICC was below .80 for

the two moderating variables task interdependence (.69) and task complexity (.73) probably

because the values for these two variables were not reported in the primary studies. The

coders needed to rate the group tasks in terms of task interdependence and task complexity on

the basis of the description of the group task in the Method section of the primary studies. In

addition to task interdependence and task complexity, the coders rated the task physicality.

These three ratings were provided on a 7-point Likert-type scale and they were averaged

across the two coders to get an overall score in the consensus coding sheet. For all other

coded variables, disagreements between two coders were resolved by discussion, and the first

author adjudicated unresolved disagreements.

We used the Pearson product-moment correlation coefficient *r* (i.e., bivariate zero-

order effect size) as the measure of effect size.[5] We tried to extract *r* directly from the primary

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[5] In the preregistration, we planned to run all analyses twice, with (a) the correlation coefficients uncorrected for measurement error and (b) the correlation coefficients corrected for measurement error by the Spearman (1904) formula because some researchers have recommended correcting for measurement error, whereas others have not (e.g., Michel et al., 2011; Rosenthal, 1991; Schmidt & Hunter, 2015). After correcting for measurement error, some correlation coefficients were above 1 or below -1. We needed to recode these coefficient to .99 and -.99, respectively, because correlations of |1.00| or higher are impossible. The correlations were sometimes higher than |1.00| when the traits and the social status of a particular person were rated by the same informant (i.e., the same informant provided information about the social status and the traits of the participant) and the reliabilities of the status outcomes were relatively low. We suspect that many of the reported reliability estimates underestimated the actual reliabilities. For example, Cronbach's alpha tends to underestimate the actual reliability (e.g., Sijtsma, 2009). Moreover, reliability indices for the social status outcomes were often not reported. For all these reasons, we decided to report only the results of the meta-analysis with uncorrected correlation coefficients in the main document. The results for the corrected correlation coefficients are reported in Figure S1 and Tables S9 to S12.

studies, that is, by extracting the correlation coefficient *r* or the standardized regression coefficient. Both *r* and the standardized regression coefficient needed to be unadjusted for control variables (for further details, see Text S1). We coded the effect sizes not only for the eight traits involved in the hypotheses (Figure 1) but also for the three Big Five traits neuroticism, conscientiousness, and openness—the effect sizes for agreeableness were part of the coded effects for antagonism.

Data Analysis

Around 20% of the primary studies reported an effect size for more than one status related outcome variable. Hence, we used multivariate meta-analysis models to take into account the dependencies that result from including multiple outcome variables measured in the same sample (e.g., Cheung, 2019; Riley, 2009). We applied the Fisher's *z*-transformation to the correlation coefficients to obtain an effect size measure that is normally distributed, which is a requirement for the multivariate meta-analysis model (e.g., Cheung, 2015). After the analysis, we back-transformed the Fisher's *z* scores into correlation coefficients and reported the correlation coefficients in the Results section.

Multivariate meta-analysis requires the covariance matrix of the Fisher's z-transformed correlation coefficients. We calculated the variances and covariances for the Fisher's *z*-transformed correlation coefficients by using the formulas (9) and (10) provided by Steiger (1980). The variance of the Fisher's *z*-transformed correlation between variables *j* and *k* is

$$VAR_{Z_{jk}} = \frac{1}{N-3} \tag{1}$$

where *N* is the number of observations that are used for estimating the correlation between variables *j* and *k*. The covariance of the Fisher's *z*-transformed correlations between variables *j* and *k* and variables *j* and *h* is

$$COV_{Z_{jk},Z_{jh}} = \frac{COV_{r_{jk},r_{jh}}}{\left(1-r_{jk}^2\right)\left(1-r_{jh}^2\right)(N-3)} \tag{2}$$

where

$$COV_{r_{jk}, r_{jh}} = r_{kh}\left(1 - r_{jk}^2 - r_{jh}^2\right) - \frac{1}{2}(r_{jk} r_{jh})(1 - r_{jk}^2 - r_{jh}^2 - r_{kh}^2)$$ (3)

with r_{kh} being the within-sample correlation between the two status related outcomes.

Whenever this within-sample correlation between two status related outcomes was not

reported in the publication, we used the meta-analytic within-sample correlation for the

respective pair of status outcomes (see Tables 2 and S13). More specifically, we conducted a

univariate random-effects meta-analysis on the reported correlations between all pairs of

status related outcomes and used the attained meta-analytic correlations as a substitute for the

unreported within-sample correlations.

In the main analyses, we fit multivariate *random-effects* models, because we expected

heterogeneity in the true effect sizes and residual heterogeneity after including moderator

variables in the analysis. Furthermore, we wanted to generalize the results to the population of

studies rather than only drawing inferences for the studies included in the meta-analysis. The

multivariate models were fitted with R (version 4.3.2; R Core Team, 2022) and the R package

metafor (version 4.4-0; Viechtbauer, 2010). We set the variance-covariance structure among

random factors (i.e., status related outcomes) to compound symmetry. Compound symmetry

means that the between-study variance (τ^2) of all status related outcomes are assumed to be

the same as well as the correlations (ρ) between all pairs of status related outcomes. We set

the variance-covariance structure to compound symmetry because some correlations between

the effects of pairs of status related outcomes could not be estimated or were unrealistically

high or low in models in which we tried to freely estimate the variance and correlation

coefficients for the different status related outcomes. The probable reason for these estimation

problems was that only around 20% of the studies assessed more than one status related

outcome and some combinations of status outcomes barely or never occurred in the studies

included in a specific hypothesis test.

The small number of effect sizes for the effect of some traits (e.g., benevolent altruism) and the small number of studies that reported effect sizes for multiple social status outcomes sometimes yielded convergence issues and unstable estimates of the average effect size. Hence, we also reported the univariate meta-analysis models to examine the robustness of multivariate models.

To quantify the heterogeneity in the multivariate random-effects models, we computed the multivariate I_R^2 statistic (see Formula 6 in Jackson et al., 2012). I_R^2 has a similar interpretation as the analogue univariate I^2 statistic (Higgins & Thompson, 2002). It is the proportion of the variance in a multivariate random-effects model that is due to between-study heterogeneity rather than within-study sampling error (Jackson et al., 2012).

Main Analysis (Hypothesis Tests)

Because we preregistered directional hypotheses, we followed the recommendations of Cho and Abe (2013) and Maner (2014) and reported one-tailed rather than two-tailed *p*-values. An exception was made for the moderation effect of length of acquaintance on extraversion because we made predictions in both directions for this moderation effect (Table S1). We used the conventional alpha level of .05 in all our significance tests although the alpha threshold would have needed to be smaller than .05 to produce a family-wise error rate of .05. We did not adjust the alpha level because a Bonferroni correction would have been overly conservative as the hypotheses tests for the same joint null hypotheses were dependent (e.g., Simes, 1986). Using a less conservative alternative correction method would have been relatively complicated, also because the number of hypothesis tests per joint null hypothesis varied. For example, Hypothesis 1 was tested by 15 significance tests (five outcomes × three predictors) whereas Hypothesis 2 was tested by 10 tests (five outcomes × two predictors). In the Results section, we noted any cases in the main analysis where a significant p-value (p < .05) failed to reach the Bonferroni adjusted alpha level.

Hypotheses 1, 2, 6, 8, and 9. To test Hypothesis 1 (i.e., physical size, antagonism, and assertiveness are positively associated with social status attainment), we conducted three multivariate meta-analysis models, one for physical size, one for antagonism, and one for assertiveness. In all three models, the dependent variables were the correlations between the status related outcomes and physical size, the status related outcomes and antagonism, and the status related outcomes and assertiveness, respectively. We included in each multivariate meta-analysis model five dummy variables to estimate and test separate effects for each status related outcome. The results were interpreted as consistent with Hypothesis 1 if the coefficient for admiring respect was significant and in the predicted direction (positive coefficient). We additionally considered the coefficients and their significance for the other status related outcome variables (i.e., influence, popularity, leadership emergence, and mixture). Analogously, we tested Hypotheses 2, 6, 8, and 9 (Table S1).

Hypothesis 3. To test Hypothesis 3 (i.e., physical size, antagonism, and assertiveness are more strongly positively associated with the attainment of attention and social influence than with the attainment of admiring respect and popularity), we first tested whether the meta-analytic effects of physical size on social influence was larger than the meta-analytic effects of physical size on admiring respect and popularity. That is, on the basis of the multivariate meta-analysis models used to test Hypothesis 1, we computed z-tests:

$$Z = \frac{B_{Y1} - B_{Y2}}{\sqrt{VAR_{Y1} + VAR_{Y2} - 2COV_{Y1,Y2}}} \tag{4}$$

where B_{Y1} and B_{Y2} were the estimated meta-regression coefficients (e.g., the coefficient for social influence and the coefficient for admiring respect), and VAR_{Y1}, VAR_{Y2}, and $COV_{Y1,Y2}$ referred to the variances and the covariance of the meta-regression coefficients. If the two coefficients were significantly different from each other and the difference was in the predicted direction, this was interpreted as evidence to reject the null hypothesis that the coefficients were the same, for example, for social influence and admiring respect. Simultaneously, we tested whether the meta-regression coefficients of antagonism and

assertiveness with social influence were larger than the meta-regression coefficients of antagonism and assertiveness with admiring respect and popularity.

Hypotheses 4, 5, 7, 10, and 11. In the investigation of the other moderation hypotheses (Hypotheses 4, 5, 7, 10, and 11; Table S1), we used multivariate random-effects models with all status related outcomes to test these hypotheses. In contrast to the preregistration, we did not differentiate between the five status related outcomes in these hypothesis tests because the number of effect sizes in the meta-analysis was not large enough to investigate the moderating effect on the correlations of each individual status related outcome. Instead, we studied whether the association between status related outcomes and the respective trait was moderated by another variable without trying to draw separate conclusions for each status related outcome. For example, to test Hypothesis 4 (i.e., the higher the task complexity of the group tasks, the more positive is the association between cognitive abilities and status attainment), we studied whether the association between cognitive ability and status related outcomes was moderated by task complexity. The results were interpreted as consistent with Hypothesis 4 if the coefficient for task complexity was significant and in the predicted direction (positive coefficient). We investigated Hypotheses 5, 7, 10, and 11 analogously.

We ran separate multivariate meta-analyses for each moderator, because this was preregistered and we had no substantial reasons to control for other moderating effects while testing the effect of one moderator. All non-nominal moderator variables (task complexity, physicality of the group tasks, task interdependence, length of acquaintance) were standardized prior to the moderation analysis because the results should be more stable with standardized moderators (e.g., Jak & Cheung, 2020).

Robustness Checks

As an unpreregistered robustness check, we reran the main analysis with cluster robust standard errors. We conducted this robustness check because, as described above, we could

not always extract the within-study correlations between the status outcomes. In these cases, we used the meta-analytic correlations among the status outcomes (Tables 2 and S13). The cluster robust standard errors correct for potential misspecification of the correlations between the status outcomes by adjusting the hypothesis testing procedure (Hedges et al., 2010).

Moreover, we noticed that the effect sizes were larger when the personality traits and social status were rated by the same informant (e.g., coworker-rated extraversion and coworker-rated social status) than when they were rated by different informants (e.g., self-rated extraversion and coworker-rated social status). The higher correlations might be due to mono-method bias (i.e., the attitude of the informant toward the rated person influencing both the status rating and the personality rating; e.g., Leising et al., 2021). Hence, as an unpreregistered robustness check, we reran the main analysis using only the effect sizes when the social status outcome and the personality traits were rated by a different informant.

Publication Bias

We assessed publication bias by comparing fixed-effect and random-effects multivariate meta-analysis models because differences in estimates of the average effect sizes may indicate the presence of publication bias (e.g., Poole & Greenland, 1999; van Aert & van Assen, 2021). Additionally, we used *p-uniform** (van Aert & van Assen, 2021) and the selection model approach (Vevea & Hedges, 1995; Hedges & Vevea, 2005) to further assess and adjust for publication bias. *P*-uniform* is a revised version of the *p*-uniform method (van Assen et al., 2015) that combines an effect size model and a selection model to correct for publication bias. The effect size model describes the distribution of effect sizes in the absence of publication bias, and the selection model describes how the effect size model is affected by the publication process (i.e., publication bias; Hedges & Vevea, 2005; McShane et al., 2016; van Aert & van Assen, 2021). In order to correct for publication bias, the selection model determines the weights of effect sizes depending on their likelihood of getting published. *P*-uniform* and the selection model approach were not applicable to multivariate meta-analysis

models. Hence, we used univariate meta-analysis models. That is, for each effect in the meta-analysis, we compared the average effect size estimate of the uncorrected univariate model with the average effect size estimate of the univariate model corrected with p-uniform* and the selection model approach, respectively.

Finally, in an unpreregistered analysis, we reran the main analysis using only effect sizes from records for which a correlation matrix with correlations among the measured variables was available. We did so because the chances are arguably higher that nonsignificant results were reported in a correlation matrix than in the text of the Results section. Thus, whenever a correlation matrix was available, publication bias should be less of an issue.

Methodological Quality of the Included Studies

According to Siddaway et al. (2018), most methodological quality tools encompass the following aspects: appropriateness of study design and sample size for addressing the research objectives; generalizability (representativeness of the sample); participant or condition selection methods; response and attrition rate; measurement of study variables; control of confounding; appropriateness of statistical analyses; quality of reporting; quality of intervention/condition; and authors' conflict of interest. Text S2 describes whether these aspects were applicable to the primary studies included in the current meta-analysis and, if applicable, how we scrutinized the included studies in terms of these aspects of methodological quality. We also outlined how we investigated the impact of the methodological quality of the included studies on the results of the meta-analysis.

Transparency and Openness

Following the PRISMA-P guidelines (Moher et al., 2015), we registered the protocol for the meta-analysis before we began coding of studies: https://osf.io/87zkc. We deviated from several aspects of the preregistered protocol, mainly because we needed to clarify the protocol, particularly the coding manual, or because the reviewers or we discovered

methodological or conceptual issues and limitations. Notably, we removed physical size as a competence-related trait from Hypotheses 2 and 11 and we entirely removed the hypothesis that, the higher the physicality of the group tasks, the more positive is the association between physical size and status attainment. We did so because the feedback of a reviewer made us realize that the relationship between physical size and social status depends more strongly on the kind of group task (not only on the physicality of the group task) and group setting than we thought (e.g., Blaker & van Vugt, 2014; Samaras, 2007). We did not change the other hypotheses except for minor revisions to the wording. We outlined all deviations from the preregistration and the reasons for the deviations in Table S7. We report the results for physical size related to the previous version of Hypotheses 2 and 11 in the main document. We report the results for the entirely removed hypothesis in Text S3 and Figure S2. The preregistration, supporting texts, figures, and tables (including the codebook), the data, and the R code for data analysis can be found at the OSF project page: https://osf.io/mcr2j. We uploaded previous versions of the manuscript as a preprint at PsyArXiv: https://psyarxiv.com/73mf4/. Maryse Müller has analyzed parts of the data of the current meta-analysis in her Bachelor thesis (Müller, 2021).

Results

Overview of the Included Studies

A PRISMA flow diagram of the literature search is depicted in Figure 2. The search in the three electronic databases resulted in 11,195 initial hits without duplicates. Scrutinizing the titles, abstracts, and if necessary the full texts reduced the number of eligible records to 95. A record might be a publication such as a journal article or book chapter or it might be an unpublished study or data set. The search for publications that cited the 95 eligible records via Google Scholar resulted in a further 8,817 initial hits without duplicates and eventually 87 additional eligible records. Furthermore, screening the reference sections of the 95 eligible records from the first search resulted in 13 additional eligible records. Screening the reference

sections from previous similar reviews resulted in 30 additional eligible records. The call and requests for unpublished studies/data resulted in nine additional eligible records. In sum, we included 234 records that reported 1,064 eligible effect sizes from 276 samples including 56,153 participants. The number of records differs from the number of samples because the same record contained sometimes more than one sample. Furthermore, the same sample was sometimes used in more than one record.

The median publication year was 2012 with a range from 1915 to 2023. Most of the 276 samples were collected in the US (165 samples), followed by Germany (25), Canada (18), Great Britain (14), China (11), Netherlands (9), Australia (6), Bolivia (4), Israel (3), South Korea (3), Austria (2), Brazil (2), Finland (2), mixed (2), Turkey (2), Ecuador (1), France (1), Hong Kong (1), Poland (1), Russia (1), Sweden (1), and Switzerland (1). Among the 177 samples for which participant's average age could be extracted from the publications, the median average age was 21 with a range from 16 to 46. Most of the samples (65%) were student samples. The groups interacted in a classroom setting in 97 of the samples (i.e., lecture, seminar, or other educational context), they interacted in a lab setting in 86 samples (i.e., participants were invited into the laboratory), and the groups interacted in a business setting in 37 samples (i.e., company/organization). In the 54 other samples, either the groups did not clearly belong to any of these three settings, or which setting the groups belonged to was not clear.

It is furthermore noteworthy that the most frequently assessed status related outcomes were peripheral to our social status definition: leadership emergence in 108 samples and popularity in 99 samples. The three other status related outcomes were assessed relatively infrequently: social influence in 34 samples, admiring respect in 17 samples, and attention in only one sample. In 77 samples, researchers used a mixture measure. Mixture measures did not assess a specific status related outcome but "social status" or "standing in the group" or they combined at least two different status related outcomes (e.g., one item of the measure

assessed influence, and another item assessed popularity). Table 2 presents the meta-analytic correlations among the five status related outcomes that were used in the meta-analysis.

The most frequently assessed traits were antagonism (in 168 samples), extraversion (147), neuroticism (113), conscientiousness (108), openness (96), assertiveness (83), and agreeableness (82). Self-monitoring was assessed in 52 samples, cognitive abilities in 41 samples, benevolent altruism in 30 samples, physical size in 22 samples, and universal altruism in 11 samples. The traits were assessed via self-report questionnaires (including ability tests) in 203 samples, via other-report questionnaires in 37 samples, and via behavioral measures in two samples. Furthermore, traits were assessed from more than one of these three sources in 17 samples.

In 223 samples, the traits and social status were assessed via different informants (e.g., the traits were self-rated, and social status was peer-rated). In 35 samples, the same informant assessed the traits and social status. In most of these cases, both social status and the traits were assessed by other group members. In 18 samples, the traits and social status were partly assessed by the same informant: Either some of the traits were rated by the others who also rated social status, or social status was not only assessed by other group members but also measured using self-ratings (e.g., status was assessed via round-robin items that included self-ratings).

Dominance-Related Traits and Social Status

Generally, the results of the main analysis were rarely substantially different from the results of the robustness check with cluster robust standard errors, and the results of the robustness check without effects for which status and the trait were rated by the same informant (Tables 3 to 6, S14). Thus, we reported the results for the two robustness checks here in the Results section only when they differed from the results of the main analysis.

On the basis of the dominance path, we hypothesized that the dominance-related traits physical size, antagonism, and assertiveness would be positively associated with social status

(Figure 1). In line with this hypothesis, physical size was positively associated with social influence ($r = .28$; $p < .001$), popularity ($r = .11$; $p = .010$), leadership emergence ($r = .13$; $p = .001$), and the status mixture outcome ($r = .14$; $p = .022$), and assertiveness was positively associated with influence ($r = .22$; $p < .001$), respect ($r = .14$; $p = .036$), leadership emergence ($r = .17$; $p < .001$), and the status mixture outcome ($r = .30$; $p < .001$; Table 3 and Figure 3). However, physical size was *not* positively associated with respect ($r = .03$; $p = .301$) and it would have not been positively associated with popularity and the mixture outcome if the alpha level would have been Bonferroni adjusted ($\alpha = .05/15 = .003$). Assertiveness was not positively associated with popularity ($r = .04$; $p = .12$) and it would have *not* been positively associated with respect after Bonferroni correction ($\alpha = .05/15 = .003$). Antagonism was *not* positively associated with any of the five status related outcomes (all $rs = -.15$ to $.02$; all $ps \geq .37$; Table 3 and Figures 3 and 4). If anything, antagonism was descriptively negatively associated with admiring respect ($r = -.15$), popularity ($r = -.13$), and leadership emergence ($r = -.08$). That said, the associations between antagonism and these status outcomes were descriptively less negative in the robustness check without effects for which status and the trait were rated by the same informant (Table 3). Assertiveness was positively associated with influence ($r = .22$; $p < .001$), respect ($r = .14$; $p = .036$), leadership emergence ($r = .17$; $p < .001$), and the status mixture outcome ($r = .30$; $p < .001$). However, assertiveness was *not* positively associated with popularity ($r = .04$; $p = .12$), and it would have not been positively associated with respect after Bonferroni correction ($\alpha = .05/15 = .003$). Figure 4 summarizes the evidence for and against the dominance path.

The null hypothesis of no heterogeneity was rejected for all dominance-related traits (all $ps \leq .001$). In fact, a large proportion of the variance was due to between-study heterogeneity, especially for antagonism ($I_R^2 = .91$) and assertiveness ($I_R^2 = .88$; Table 4; for funnel plots, see Figure S3). Although the between-study heterogeneity was reduced in the analysis without effects based on the same informant, it was still sizeable (e.g., $I_R^2 = .65$ for

antagonism and .58 for assertiveness; Table S15; for funnel plots, see Figure S4). The large between-study heterogeneity indicates that the found effect in any particular study was usually considerably higher or lower than the average effect size that we found. This suggests that any particular trait is differently related to status in different contexts. For example, although assertiveness tended to be positively associated with status related outcomes, it was negatively associated in some circumstances and contexts (Figures S3 and S4).

We furthermore hypothesized that the dominance-related traits physical size, antagonism, and assertiveness would be more strongly positively associated with the attainment of attention and social influence than with the attainment of admiring respect and popularity. In accordance with this hypothesis, we found that physical size and antagonism were more strongly positively correlated with social influence ($rs = .28$ and $.02$) than with respect ($rs = .03$ and $-.15$; ps for the difference $< .001$ and $.003$) and popularity ($rs = .11$ and $-.13$; ps for the difference $= .006$ and $.002$; Figure 4). Furthermore, assertiveness was more strongly positively correlated with influence ($r = .22$) than with popularity ($r = .04$; p for the difference $= .001$). That said, we did not find that assertiveness was more strongly positively correlated with influence ($r = .22$) than with respect ($r = .14$; p for the difference $= .18$; Table 5). The results regarding Hypothesis 3 were very similar in the two robustness checks with cluster robust standard errors and without effects for which status and the trait were rated by the same informant, respectively (Table 5). A difference in these two robustness checks was that assertiveness was more positively correlated with influence ($rs = .22$ and $.25$) than with respect ($rs = .14$ and $.12$; ps for the difference $= .048$ and $.002$).

Competence-Related Traits and Social Status

On the basis of the competence path (Figure 1), we hypothesized that the competence-related traits cognitive ability and extraversion would be positively associated with social status. Cognitive ability was positively associated with influence ($r = .26$; $p < .001$), leadership emergence ($r = .16$; $p < .001$), and the status mixture outcome ($r = .23$; $p < .001$)

but not with respect ($r = .12$; $p = .095$) or popularity ($r = .05$; $p = .11$). That said, we found

only one effect size for the association between cognitive ability and respect. Thus, the

corresponding significance test was presumably underpowered due to the large standard error,

which is also visible in the relatively wide 95% confidence interval from -.06 to .29 (Figure

3). In the robustness check with robust standard errors, cognitive ability was positively

correlated with all five status outcomes (all ps $\leq$ .031). Extraversion was positively correlated

with all five social status outcomes (all rs = .12 to .26; all ps $\leq$ .001; Table 3 and Figures 3

and 4). Again, the null hypothesis of no heterogeneity was rejected for all competence-related

traits (all ps < .001; Table 4). The between-study heterogeneity was descriptively higher for

extraversion ($I_R^2 = .82$) than for cognitive abilities ($I_R^2 = .66$; Tables 4 and S15).

      We additionally hypothesized that the higher the task complexity of the group tasks,

the more positive the association between cognitive abilities and status attainment would be.

However, we did not find sufficient evidence to reject the null hypothesis. That is, task

complexity did not show a significant association with the correlation between cognitive

ability and status related outcomes ($b = 0.00$; $p = .43$; Table 6). Moreover, we hypothesized

that the higher the task interdependence of the group tasks, the more positive the association

between extraversion and status attainment would be. Yet, we did not find evidence to reject

the null hypothesis ($b = -0.02$; $p = .97$; Table 6 and Figure 4).

Virtue-Related Traits and Social Status

      On the basis of the virtue path (Figure 1), we hypothesized that benevolent and

universal altruism would be positively associated with social status. In line with the

hypothesis, benevolent altruism was positively associated with social influence ($r = .53$; $p <$

.001), admiring respect ($r = .45$; $p = .013$), popularity ($r = .32$; $p < .001$), and the mixture

outcome ($r = .37$; $p < .001$; Table 3 and Figures 3 and 4). However, benevolent altruism was

not positively associated with leadership emergence ($r = .22$; $p = .060$; Table 3) and it would

have not been positively associated with respect after Bonferroni correction ($\alpha = .05/9 =$

.006). In the robustness check without effects based on the same informant, the meta-analytic correlations between benevolent altruism and the status outcomes were descriptively smaller (Table 3) and only the meta-analytic correlation with the mixture status outcome was significant ($r = .34$; $p = .003$).

Universal altruism was positively correlated with popularity ($r = .30$; $p = .006$) and leadership emergence ($r = .24$; $p = .046$) but not with respect ($r = .29$; $p = .22$) and the status mixture outcome ($r = .11$; $p = .20$) and the association with popularity and leadership emergence would have not been significant after Bonferroni correction ($\alpha = .05/9 = .006$). In the robustness check without effects based on the same informant, the meta-analytic correlations between universal altruism and the status outcomes were again descriptively smaller (Table 3) and only the meta-analytic correlation with leadership emergence remained significant ($r = .11$; $p = .022$; Table 3). That said, there were only a few studies that assessed benevolent and universal altruism, even more so after we removed effects for which status and the trait were rated by the same informant. Thus, more studies are needed to draw more definite conclusions about these associations.

The null hypothesis of no heterogeneity was rejected for both virtue traits (both $ps < .001$). The between-study heterogeneity was relatively high for both benevolent altruism (main analysis: $I_R^2 = .89$; robustness check: $I_R^2 = .84$) and universal altruism (main analysis: $I_R^2 = .93$; robustness check: $I_R^2 = .57$; Tables 4 and S15).

We hypothesized that the higher the individualism score of a country, the more positive the association between universal altruism and social status attainment would be. However, the individualism score of a country was not associated with the correlation between universal altruism and social status ($b = 0.04$; $p = .29$; Table 6 and Figure 4).

Micropolitics-Related Traits and Social Status

On the basis of the micropolitics path (Figure 1), we hypothesized that assertiveness, extraversion, and self-monitoring would be positively associated with social status. As we

already reported above, assertiveness and extraversion were positively related with (almost) all status related outcomes (Table 3). Similarly, self-monitoring was positively associated with social influence ($r = .15$; $p = .008$), respect ($r = .28$; $p = .015$), leadership emergence ($r = .09$; $p = .001$), and the social status mixture outcome ($r = .18$; $p < .001$). Self-monitoring was not positively associated with popularity ($r = .05$; $p = .18$; Table 3 and Figure 3) and its associations with influence and respect would have not been significant after Bonferroni correction ($\alpha = .05/15 = .003$). Similar as for other traits, the null hypothesis of no heterogeneity was rejected for self-monitoring and its between-study heterogeneity was sizeable (main analysis: $I_R^2 = .76$; robustness check without effects based on the same informant: $I_R^2 = .75$).

Length of Acquaintance as a Moderator

We furthermore hypothesized, that the shorter the length of acquaintance, the more positive the association of assertiveness, extraversion, and self-monitoring with status attainment would be. However, length of acquaintance did not moderate the associations between assertiveness and status related outcomes ($b = -0.02$; $p = .13$), extraversion and status related outcomes ($b = 0.00$; $p = .38$), and self-monitoring and status related outcomes ($b = 0.03$; $p = .95$; Table 6) in the predicted direction. We also hypothesized that the longer the length of acquaintance, the more positive the association of competence-related and virtuous traits with status attainment would be. Length of acquaintance did not moderate the associations between cognitive ability and status related outcomes ($b = -0.06$; $p = .99$) and extraversion and status related outcomes ($b = 0.00$; $p = .38$; Table 6) in the predicted direction. We did not test the hypothesis for benevolent altruism because there was hardly any variation in length of acquaintance among the effects for benevolent altruism. That is, among the 31 available effects for benevolent altruism, 29 effects were from samples with groups that already existed for extended periods of time. Finally, length of acquaintance was positively related to the correlation between universal altruism and social status ($b = 0.15$; $p =$

.025; Figure S5). This indicates that universal altruism was more strongly positively associated with social status after the group members became better acquainted with one another than initially. This moderation effect would have not been significant if we would have Bonferroni adjusted the alpha level (α = .05/3 = .017).

In the moderation analyses for Hypotheses 4, 5, 7, 10, and 11, the number of effect sizes was relatively small for all traits except extraversion and assertiveness (Table 6). Furthermore, the length of acquaintance variable was skewed. In most samples, social status was assessed when the groups had already existed for extended periods of time, that is, for more than 10 group interactions. Thus, the results of these moderation analyses are very tentative.

Big Five Personality Traits

In addition to extraversion which was part of our hypotheses (Figure 1), we also investigated how the other four Big Five traits were associated with social status in an exploratory manner. As already reported above, extraversion was positively related with all status related outcomes (all rs = .12 to .26; Table 3). Neuroticism tended to be negatively associated with status related outcomes (all rs = -.10 to -.04). Conscientiousness, openness, and agreeableness tended to be positively associated with status related outcomes (all rs for conscientiousness = .02 to .10; all rs for openness = .00 to .12; all rs for agreeableness = -.12 to -.02). Notably, the found effect sizes for extraversion were larger and more robust than the effect sizes found for the other four Big Five traits (Tables 3, S14, and S17). For all five Big Five traits, the null hypothesis of no heterogeneity was rejected and the between-study heterogeneities were sizeable (all I_R^2s = .58 to .82; Table 4).

Publication Bias

There were few signs of publication bias according to the comparisons of fixed-effect and random-effects multivariate meta-analysis models (Table S16). Furthermore, there were hardly any meaningful differences between the effect size estimates from the univariate meta-

analysis and the estimates from the univariate meta-analysis corrected for publication bias with p-uniform* and the selection model approach, respectively (Table 3). A few effects become smaller and nonsignificant after controlling for publication bias, for example the meta-analytic correlations between assertiveness and the status mixture outcome (Table 3). A few effects became larger and significant after controlling for publication bias, for example the meta-analytic correlations between assertiveness and popularity (Table 3). Finally, in the 198 out of the 336 records for which a correlation matrix was available, the results were similar to the main results (Figure S6 and Tables S17 to S20). Three differences in the analysis of the 198 records with correlation matrix were that the associations of physical size with popularity and leadership emergence were *not* significant and that the association of assertiveness with popularity was significant. Taken together, the analyses suggested that publication bias was not a big issue.

Discussion

To understand why individuals tend to have high or low rankings in social status hierarchies, psychologists and social scientists have studied how various traits (e.g., personality traits, cognitive abilities, or height) are related to status attainment in face-to-face groups for over 100 years. The current study provides the first comprehensive theoretical review and preregistered meta-analytic quantification of this research. In the theoretical review, we integrated traditional and contemporary theoretical viewpoints to arrive at four paths leading from individual differences to social status attainment: the dominance path, the competence path, the virtue path, and the micropolitics path. On the dominance path, individuals attain social status because they are intimidating and coercive. On the competence path, individuals attain social status due to their instrumental skills, success, or knowledge. On the virtue path, individuals attain social status from engaging in moral acts that go beyond conformity to social norms. Finally, on the micropolitics path, individuals attain social status via self-promotional behavior that emphasizes or feigns competence, commitment, or virtue.

Hypotheses derived from these four paths were then put to a test by meta-analyzing the existing body of evidence on how personality traits, cognitive ability, and physical size are related to social status attainment in face-to-face groups.

How Did the Four Theoretically Derived Paths Match the Meta-Analytic Correlations?

The meta-analytic correlations were only partly in line with the dominance path (Figure 4). Although physical size and assertiveness were each positively correlated with four of the five status related outcomes, physical size was *not* positively related to the core aspect of social status, admiring respect, and antagonism was uncorrelated or negatively correlated with all status related outcomes. The absence of these positive associations was particularly diagnostic for the dominance path because associations of physical size and antagonism with social status were predicted only by the dominance path but not by any of the other three paths. By contrast, associations of assertiveness with social status could alternatively be explained by the micropolitics path (Figure 1). We largely found support for our hypothesis that dominance-related traits would be more positively related to influence than to respect or popularity. This suggests that dominance-related traits might lead to social rank rather than to social status. However, the absence of a positive association between antagonism and influence raises doubts about whether the willingness to inflict harm actually enhances social rank. Perhaps only the ability (physical size) but not the willingness (antagonism) to inflict harm increases social rank. Thus, the meta-analytic correlations cast some doubt on theories positing that an individual's ability and willingness to use force leads to social status or rank (e.g., Cheng et al., 2013; Henrich & Gil-White, 2001). These theories might not be valid in Western, Educated, Industrialized, Rich, and Democratic (WEIRD; Henrich et al., 2010) populations from which most of the meta-analyzed studies drew their samples.

The meta-analytic correlations were relatively strongly in line with the competence path (Figure 4). Both competence-related traits (cognitive ability and extraversion) tended to be positively correlated with status related outcomes. However, the relationship between

cognitive ability and admiring respect was not clear because we found only one effect size. The two hypotheses that task nature moderates the links between competence traits and status were not supported, not even when we tested the hypothesis that task interdependence moderates the correlation between extraversion and status with 169 effects sizes. The lack of evidence for a moderating effect of the nature of the group task somewhat challenges the competence path because the context-dependency of status attainment is a feature of the functionalist theories on which the competence path rests (e.g., Anderson & Kennedy, 2012). Taken together, we found some evidence for the competence path but not for a moderation of the path by the nature of the group task.

In line with the virtue path, all but one of the meta-analytic correlations of benevolent and universal altruism with status related outcomes were equal to or larger than .22 in the main analysis. In contrast to Bai's (2017) argument that the virtue route to status is culturally bounded, we did not find that the association between universal altruism and social status was stronger in individualistic than collectivistic cultures. That said, we found only a few eligible studies that assessed benevolent and universal altruism and the meta-analytic correlations had large confidence intervals. Moreover, the effect sizes were descriptively smaller after excluding effects for which status and the trait were rated by the same informant. This suggests that halo effects (e.g., Anusic et al., 2009; Leising et al., 2021) inflated the meta-analytic associations in the main analysis. Hence, further empirical evidence is needed to properly evaluate the virtue path and the hypothesis that it is moderated by culture. If the virtue path would be supported by future studies, this would suggest that the unselfish and unconditional upholding of moral ideals leads to status attainment in groups (e.g., Bai, 2017; Bai, Ho, & Yan, 2020).

The meta-analytic correlations were largely in line with the micropolitics path (Figure 4). All three micropolitics-related traits (assertiveness, extraversion, and self-monitoring) were positively related to most of the status related outcomes. Hence, we think the reviewed

evidence provides strong support for the notion that status attainment depends not only on the actual competence or virtue of an individual but also on how individuals can enhance their apparent competence or virtue by engaging in assertive, extraverted, and self-monitoring behavior. The strong support for the micropolitics path is noteworthy because the micropolitics model (e.g., Anderson & Kennedy, 2012) has received less attention than other theories about individual differences and status attainment. That is, the work in which Anderson and Kennedy (2012) originally proposed the micropolitics model has to date (August 2023) been cited only 38 times according to Google Scholar, whereas, for example, the dominance-prestige account proposed by Henrich and Gil-White (2001) and Cheng et al. (2013) has been cited 3,091 and 1,105 times, respectively. The micropolitics model might have been overlooked by many researchers in the complex existing body of theories, which underlines the need for the current theoretical review and synthesis.

For all four paths, we found a relatively large amount of between-study heterogeneity. This suggests that any particular trait is differently related to status in different contexts. Alternatively, the between-study heterogeneity might be a consequence of methodological differences. For example, between-study differences in measurement range restrictions and measurement error might have affected the correlation coefficients (e.g., Rohrer & Arslan, 2021) and thus increased the between-study heterogeneity. In any case, the effect may likely be higher or lower in a new study compared to the average effect size that we found. Future research might want to investigate moderators of the four paths to get a better understanding about the reasons for the between-study heterogeneity.

Differences Between Status Related Outcomes

Previous work has suggested that social status is differently defined and measured across studies and disciplines (e.g., Cheng et al., 2013). Hence, we coded different status related outcomes and analyzed them as distinct outcomes in most of our multivariate meta-analysis models. The current findings underline the need to distinguish these outcomes

because traits were differently related to various status related outcomes. For example, physical size was more strongly correlated with social influence than with admiring respect and popularity. Furthermore, a supplementary meta-analysis of the within-study correlations among the status related outcomes indicated that some pairs of status related outcomes are only moderately correlated with each other, for example, influence and leadership emergence (Table 2).

At the same time, few primary studies assessed and analyzed the different status related outcomes separately. Researchers often used a mixture measure that simultaneously assessed more than one outcome. Moreover, popularity and leadership emergence were more frequently assessed than admiring respect and influence. This is unfortunate because popularity and leadership emergence are not central to most social status definitions (e.g., Anderson et al., 2015; Cheng et al., 2013; Magee & Galinsky, 2008). Hence, we recommend that future research on social status attainment focuses on status related outcomes that are central to the social status definition (i.e., admiring respect and voluntary compliance). Additionally, researchers should assess and analyze status related outcomes separately in order to obtain a more fine-grained picture of how and why each trait is related to the various status related outcomes.

Furthermore, differences between the status related outcomes need to be integrated into the theoretical pathways and frameworks. The research by Cheng et al. (2013) and our theoretical review and meta-analytic findings suggest, for example, that dominance-related traits are more positively or less negatively related to influence (and attention) than to other status related outcomes. Hence, it might be worthwhile to differentiate social influence (and attention) more explicitly from the other kinds of status related outcomes, at least on the dominance path.

Does Length of Acquaintance Matter?

In the Introduction, we reasoned that, over time, micropolitical behavior should become less appreciated and less effective in increasing apparent instrumental value, and actual competence and virtue should become more apparent (e.g., Back et al., 2018; Connelly & Ones, 2010; Campbell & Campbell, 2009; Leckelt et al., 2015). Hence, we hypothesized that micropolitical traits would be *more* strongly correlated with status attainment at zero and short-term acquaintance than at long-term acquaintance and that competence- and virtue-related traits would be *less* strongly correlated with status attainment at zero and short-term acquaintance than at long-term acquaintance. We did not find evidence for these hypotheses, except for universal altruism. A potential reason for the lack of support could be limited statistical power for the moderation analyses that prevented us from thoroughly testing these hypotheses. Several of the hypothesis tests were based on a small number of effect sizes, there was a considerable amount of between-study heterogeneity, and most of the samples consisted of groups that had already been acquainted for a long time. Thus, the current meta-analysis cannot provide a solid answer about whether length of acquaintance matters in the hypothesized way.

If the associations of micropolitics and competence-related traits with social status were indeed unaffected by the level of acquaintance of the group members, this lack of a moderating effect by level of acquaintance would somewhat challenge research that has suggested that assertive behavior is evaluated more positively in groups of zero and short-term acquaintances than in groups of long-term acquaintances (e.g., Back et al., 2018; Leckelt et al., 2015; Paulhus, 1998). Perhaps the high stability of status hierarchies and the numerous ways in which they reinforce themselves (e.g., Anderson et al., 2001; Anderson & Kennedy, 2012; Magee & Galinsky, 2008; Schmid Mast, 2001) could explain why individuals who initially attain status through micropolitical behavior tend to manage to remain on top of the hierarchy even when their micropolitical behavior is seen as less positive (e.g., Leckelt et al., 2015). Furthermore, if competence-related traits could already lead to status in groups of zero

and short-term acquaintances, this would imply that other group members could recognize and appreciate competence relatively early in the process or that humans might have evolved an innate predisposition to grant social status to individuals who display cues of competencies that were instrumental in our phylogenetic history.

What are the Underlying Processes?

In the current meta-analysis, we did not study the underlying processes that characterize the paths from traits to social status attainment. However, the relatively strong evidence for the micropolitics path is in line with previous conceptual work that emphasized that a personality trait can only lead to social status attainment if it is expressed in observable behaviors and if these behaviors are perceived and utilized by others to form an impression and assign status (e.g., Back et al., 2018; Grosz, Leckelt, & Back, 2020). Past research has identified some behaviors and perceptions that probably mediate associations between personality traits and the attainment of popularity in face-to-face groups (for a review, see Grosz, Leckelt, & Back, 2020). For example, a Brunswikian lens model analysis has suggested that extraversion is expressed via energetic and self-assured movements, strength of voice, and friendly facial gestures and that these behavioral cues are perceived and utilized by other group members to evaluate the person in terms of likeability (Back et al., 2011).

However, most empirical research on the underlying processes has focused on popularity rather than on outcomes that are at the core of our social status definition (e.g., admiring respect). Furthermore, research on the processes has studied extraversion and narcissism rather than cognitive ability, self-monitoring, or altruism. For example, although previous research has suggested that people high in self-monitoring are perceived as more generous than people low in self-monitoring and that these perceptions might mediate the relationship between self-monitoring and social status (Flynn et al, 2006), it is not yet sufficiently clear which self-monitoring behaviors others perceive and utilize in order to arrive at the generosity judgments. Future studies could deepen our understanding of the

processes that characterize the paths from traits to status by using a lens model analysis to relate latent traits (e.g., self-monitoring) to observable behaviors and to relate these observable behaviors to perceptions by other group members and status attainment.

Limitations and Future Directions

In the current meta-analysis, we aggregated the standardized effect sizes for bivariate associations from studies that varied in terms of study design, personality measure, status measure, instructions, country of origin, and other factors. Thus, the current meta-analysis addresses concerns about the generalizability of psychological findings to a broader set of circumstances and contexts (e.g., Simons et al., 2017; Yarkoni, 2022). At the same time, the meta-analytic approach we utilized has its limitations. For example, bivariate associations are often ill-suited for estimating causal effects because bivariate associations might be affected by confounding effects, reverse causality, and other biases (e.g., Matthay & Glymour, 2020). Some of these threats to causal inference might not be applicable to studies about individual differences and social status attainment. For example, reverse causality might not be an issue when traits are very stable or when traits were assessed before the group members got to know each other. Nevertheless, there could be a distinct gap between the actual causal effects of individual differences on social status attainment and the meta-analytic correlations we found. For example, most of our meta-analysis models included only one independent variable, the hypothesized trait (e.g., physical size). To properly estimate causal effects, it might be necessary to adjust for several variables in the analysis model (e.g., the other hypothesized traits, gender, age, physical attractiveness, formal status position). However, this was not feasible in our meta-analysis, because many of the relevant effect sizes were not reported in most included studies. Similarly, we could not use meta-analytic structural equation modeling (e.g., Cheung, 2015) because a large portion of the relevant data points were missing values. Estimating causal effects and fitting complex structural equation models is more feasible in a primary study or a mega-analysis (i.e., the pooling of raw data from

multiple studies; e.g., Eisenhauer, 2021) than in a meta-analysis. Hence, we would like to encourage future empirical studies to estimate the causal effects with the help of careful study design and data analysis (e.g., Morgan & Winship, 2015; VanderWeele, 2019).

We tested the four paths to status attainment by investigating the associations of relatively stable traits with social status. The four paths could alternatively be tested by investigating the associations of strategies or skills with social status. For example, the dominance and micropolitics paths could be tested by examining how the strategies of displaying dominant body language and deceptive self-promotion, respectively, are related to status attainment. Strategies and skills might be more malleable and experimentally manipulatable than traits. Thus, to get a deeper understanding of the causal links between behaviors and status attainment, it would be desirable to complement our work with experimental studies on the associations of strategies and skills with status.

The current meta-analysis included over 1,000 effect sizes from over 250 samples. Nevertheless, we found only few studies that investigated how cognitive abilities, physical size, and altruism are related to status related outcomes and in particular to admiring respect. We were especially surprised to find only a few studies on cognitive abilities and physical size because these traits are often linked to social status in lay beliefs, popular media, and scientific theories (e.g., status-size hypothesis; Blaker & van Vugt, 2014). Perhaps researchers have more frequently investigated how cognitive abilities and physical size are related to formal status positions and socioeconomic status than to the informal status positions in face-to-face groups we focused on. We encourage future studies to assess how cognitive abilities, physical size, and altruism are related to informal social status in face-to-face groups.

A further limitation of the current meta-analysis is that most samples were from WEIRD populations. For example, about two-thirds of the samples were students and most samples were from Western countries. This fact was probably further aggravated by the fact that we excluded 155 records in the screening phase that were not written in English or

German (Table 1 and Figure 2). Future primary studies might want to investigate the relationships between traits and status in non-WEIRD samples. Future meta-analytic tests of how these relationships are moderated by culture (Hypothesis 7) might benefit from incorporating more primary studies from non-WEIRD populations, such as including publications written in other languages than English or German.

Conclusion

The current review addressed the pressing need for a theoretical synthesis and meta-analytical quantification of the extensive literature on individual differences and social status attainment. The findings of the review suggest that social status attainment depends not only on the actual competence or virtue of an individual but also on how individuals can enhance their apparent competence or virtue by behaving in assertive, extraverted, and socially appropriate ways.

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Table 1
Eligibility Criteria

Inclusion criteria	Exclusion criteria
• Group members had face-to-face contact	• Virtual groups, hypothetical groups, vignette studies • Participants interacted with confederates (actors)
• Status related outcomes: measures of social status, admiration, respect, esteem, influence, social power, attention, standing, liking, popularity, prominence, deference, leadership emergence (led the group, emerged as leader, informally elected as leader, perceived leadership, rank ordering on emergent leadership, could imagine as a leader)	• Formal status positions in organizations (CEO, manager, formal leadership position) • Socioeconomic status (income, education, wealth) • Occupational prestige (i.e., how prestigious is the job a person holds) • Job performance, academic performance • Other-rated helpfulness, supportiveness, trustworthiness (unless these attributes were a small part of status/likeability measure and could not easily be removed from the status measure) • Leadership effectiveness, leadership skills • Attractiveness as a romantic partner (romantic attraction)
• Status related outcomes reported by other group members (ideally round-robin ratings or nominations by other group members; might also be social status reported by co-workers, friends) • Status related outcomes reported by non-group members (uninvolved raters/observers) • Objectively measured status related outcomes (behavioral measures of social influence)	• Self-reported status related outcomes[a]
• Studies that measured at least one of the following traits: physical size, height, muscularity, extraversion, neuroticism (also called emotional stability or emotionality in the HEXACO model); agreeableness; conscientiousness; openness to experience (also called openness or intellect); honesty-humility; antagonism; aggressiveness (trait aggression); Machiavellianism; psychopathy; narcissism (including grandiose narcissism, assertive narcissism, antagonistic narcissism; excluding vulnerable narcissism); trait dominance; assertiveness; cognitive	• Studies that only assessed well-being, self-esteem, vocational interests, or attitudes • Independent variables that were not interpretable or could not be categorized (e.g., due to lack of information provided by the authors, or due to inconsistent item content)

abilities (including IQ, various forms of intelligence, etc.); self-monitoring; altruism; generosity; benevolence values; universalism values; pro-environmentalism

- Measure of IQ (cognitive abilities) was objective and continuous

- Subjective measures of IQ (e.g., self-ratings, teacher ratings, other ratings) or categorical measures (e.g., presence of impairment)
- Achievement measures of IQ (e.g., reading, arithmetic, and science tests) were also *not* included[b]

- Article was written in English or German

- Article was written in a language other than English or German
- No empirical data collection reported

- Unadjusted effect (i.e., zero-order bivariate correlation coefficient or standardized regression coefficient from regression without other independent variables)

- If unadjusted effects were not provided, then we e-mailed the authors (maximum of two email attempts). If they did not provide unadjusted effects, we excluded the study/effect

- Samples in which the average age was 16 years or older

- Publications that contained only samples in which the average age was under 16 years

- No restrictions on year of publication.
- No restrictions on publication status or publication outlet. For example, we also included preprints and unpublished data

[a] We did not include studies with self-report outcome measures because we wanted to minimize mono-method biases. For example, both self-reported personality and self-reported status might have been influenced by the attitude toward the self, also called halo effect (e.g., Anusic et al., 2009; Leising et al., 2021). This halo effect might have inflated the meta-analytic associations between personality traits and status related outcomes.

[b] We did not include achievement tests as an indicator of cognitive abilities because the skills assessed by achievement tests are more strongly malleable (via education) than cognitive abilities (Ritchie & Tucker-Drob, 2018).

Table 2

Meta-Analytic Correlations Among Social Status Outcomes and 95% Confidence Intervals

	Influence	Admiring respect	Popularity	Leadership emergence
Admiring respect	.49 [.26, .67]			
Popularity	.27 [.17, .37]	.83 [.35, .97]		
Leadership emergence	.18 [-.02, .36]	.72 [.31, .91]	.45 [.26, .60]	
Mixture	.72 [.24, .92]	.46 [.26, .62]	.44 [.35, .52]	.65 [.53, .75]

Note. k = 3 to 16. The displayed results are based on univariate random-effects meta-analyses for each pair of social status outcomes (for more details, see Table S13). A positive meta-analytic correlation (e.g., r = .49) means that higher values on a status related outcome (e.g., influence) tend to be accompanied by higher values on another status related outcome (e.g., admiring respect). Wallace (2012) reported a correlation between respect and popularity of 1.00. This correlation caused the warning that some values equal infinity because we Fisher z-transformed the correlation coefficients prior to the meta-analysis. Thus, we recoded this particular correlation coefficient to .99 instead of 1.00. After the meta-analysis, we back-transformed all Fisher's z scores into correlation coefficients and reported the correlation coefficients here in the table.

Table 3

Meta-Analytic Correlations Found in Multivariate and Univariate Random-Effects Meta-Analyses, Publication-Bias-Adjusted Univariate Models, and Robustness Checks

	k^a	N^a	Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
			r [95% CI]	[95% CI][b]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Physical size								
Influence	4	431	.28 [.16, .40]	[.14, .41]	.28 [.16, .40]	.32 [.14, .48]	.33 [-.20, .54]	.33 [.12, .51][c]
Respect	4	694	.03 [-.07, .12]	[-.05, .11]	.03 [-.07, .12]	.01 [-.16, .19]	-.08 [-.16, .10]	-.08 [-.16, .00][c]
Popularity	7	800	.11 [.02, .20]	[.04, .18]	.11 [.02, .20]	.01 [-.06, .08]	.02 [-.06, .19]	.02 [-.05, .08][c]
Leadership Emerg.	8	1369	.13 [.05, .22]	[.03, .23]	.13 [.05, .22]	.14 [.03, .25]	.11 [-.06, .29]	.10 [-.05, .26]
Mixture	4	404	.14 [.00, .26]	[.03, .24]	.14 [.00, .26]	.18 [.08, .27]	.21 [.04, .44]	.23 [.10, .36][c]
Antagonism								
Influence	21	3437	.02 [-.07, .10]	[-.06, .09]	.03 [-.03, .08]	.02 [-.08, .12]	.11 [-.05, .38]	.11 [-.09, .30]
Respect	14	3159	-.15 [-.24, -.05]	[-.25, -.04]	-.04 [-.10, .02]	-.18 [-.37, .03]	-.08 [-.37, .57]	-.08 [-.44, .30][c]
Popularity	69	20678	-.13 [-.18, -.08]	[-.18, -.08]	-.10 [-.13, -.06]	-.11 [-.17, -.05]	-.04 [-.14, .11]	-.04 [-.16, .07]
Leadership Emerg.	57	10984	-.08 [-.14, -.02]	[-.12, -.04]	-.04 [-.07, -.01]	-.05 [-.10, -.01]	-.06 [-.11, .01]	-.06 [-.11, .00]
Mixture	46	7751	.01 [-.06, .07]	[-.07, .08]	-.04 [-.08, .00]	-.03 [-.10, .03]	.06 [-.06, .25]	.06 [-.08, .20]
Assertiveness								

	k^a	N^a	Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
			r [95% CI]	[95% CI][b]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Influence	12	2592	.22 [.12, .32]	[.14, .30]	.25 [.19, .31]	.22 [.15, .29]	.17 [-.08, .28]	.16 [.02, .30][c]
Respect	5	1356	.14 [-.01, .29]	[.08, .20]	.12 [.04, .20]	.21 [.03, .37]	.26 [-.04, .47]	.24 [.01, .45][c]
Popularity	35	7678	.04 [-.02, .10]	[-.01, .09]	.02 [-.02, .06]	.04 [-.02, .09]	.15 [.03, .35]	.15 [.00, .30]
Leadership Emerg.	41	6192	.17 [.11, .23]	[.12, .22]	.15 [.11, .18]	.18 [.12, .23]	.18 [.09, .26]	.17 [.09, .25]
Mixture	15	2162	.30 [.21, .38]	[.14, .44]	.18 [.13, .23]	.32 [.15, .46]	.22 [-.20, .47]	.21 [-.11, .49]
Cognitive ability								
Influence	3	539	.26 [.14, .36]	[.17, .33]	.26 [.14, .36]	.23 [.12, .33]	.18 [-[d], .32]	.18 [.12, .25][c]
Respect	1	420	.12 [-.06, .29]	[.12, .12]	.12 [-.06, .29]	.12 [.02, .21]	-[d]	-[d]
Popularity	10	1204	.05 [-.03, .13]	[.00, .10]	.05 [-.03, .13]	.02 [-.04, .08]	.03 [-.03, .21]	.03 [.01, .06][c]
Leadership Emerg.	26	4578	.16 [.12, .20]	[.11, .21]	.16 [.12, .20]	.17 [.12, .21]	.15 [.07, .22]	.14 [.07, .21]
Mixture	9	1294	.23 [.16, .30]	[.14, .31]	.23 [.16, .30]	.23 [.14, .31]	.24 [.05, .35]	.23 [.10, .35][c]
Extraversion								
Influence	21	3321	.24 [.18, .29]	[.17, .30]	.24 [.18, .30]	.24 [.17, .30]	.22 [.09, .31]	.21 [.11, .31]
Respect	8	2303	.14 [.05, .23]	[.06, .22]	.15 [.05, .24]	.12 [.02, .22]	.10 [-.08, .26]	.10 [-.05, .25]

	k^a	N^a	Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
			r [95% CI]	[95% CI][b]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Popularity	42	13490	.12 [.08, .16]	[.08, .16]	.12 [.07, .16]	.12 [.08, .16]	.14 [.09, .20]	.12 [.06, .18]
Leadership Emerg.	65	12126	.17 [.13, .20]	[.14, .20]	.16 [.13, .20]	.17 [.13, .20]	.15 [.10, .19]	.13 [.08, .18]
Mixture	40	5908	.26 [.21, .30]	[.20, .31]	.26 [.22, .30]	.26 [.21, .31]	.31 [.23, .37]	.29 [.22, .36]
Benevolent altruism								
Influence	4	630	.53 [.32, .69]	[.48, .58]	.28 [-.25, .68]	.52 [.46, .58]	.52 [.45, .58]	.52 [.47, .57][c]
Respect	2	116	.45 [.06, .72]	[.32, .57]	_[d]	.41 [.25, .56]	.38 [-[d], .59]	_[d]
Popularity	15	2924	.32 [.20, .44]	[.16, .47]	.09 [-.10, .26]	.32 [.17, .45]	.35 [.07, .52]	.35 [.14, .53]
Leadership Emerg.	4	182	.22 [-.06, .47]	[-.13, .53]	.18 [-.10, .44]	.21 [-.16, .54]	.06 [-.50, .61]	.05 [-.40, .48][c]
Mixture	10	2352	.37 [.21, .51]	[.22, .50]	.34 [.10, .55]	.38 [.24, .50]	.46 [.31, .57]	.46 [.35, .55]
Universal altruism								
Influence	0	0	_[d]	_[d]	_[d]	_[d]	_[d]	_[d]
Respect	1	91	.29 [-.43, .78]	[.29, .29]	_[d]	.29 [.09, .47]	_[d]	_[d]
Popularity	8	1830	.30 [.07, .50]	[-.10, .62]	.03 [-.07, .12]	.32 [.01, .57]	.54 [.13, .79]	.55 [.24, .76]
Leadership Emerg.	4	864	.24 [-.04, .49]	[-.06, .50]	.11 [.00, .21]	.10 [-.02, .22]	.17 [-.02, .52]	.16 [-.07, .38][c]

	k^a	N^a	Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
			r [95% CI]	[95% CI][b]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Mixture	6	1288	.11 [-.15, .35]	[-.17, .37]	.01 [-.13, .15]	.25 [.01, .46]	.38 [.01, .65]	.40 [.14, .60][c]
Self-monitoring								
Influence	6	776	.15 [.03, .27]	[.09, .21]	.15 [.01, .29]	.16 [.09, .23]	.12 [-.02, .22]	_[d]
Respect	1	420	.28 [.03, .50]	[.28, .28]	.28 [.02, .50]	.28 [.19, .37]	_[d]	_[d]
Popularity	10	1256	.05 [-.05, .15]	[-.11, .21]	.05 [-.05, .15]	.06 [-.09, .21]	.30 [.00, .82]	.29 [-.13, .63][c]
Leadership Emerg.	32	3558	.09 [.04, .15]	[.04, .14]	.09 [.04, .15]	.09 [.04, .14]	.08 [.01, .18]	.08 [.00, .16]
Mixture	15	1928	.18 [.10, .26]	[.11, .25]	.18 [.10, .26]	.19 [.11, .26]	.22 [.10, .35]	.23 [.12, .34]
Neuroticism (exploratory)								
Influence	16	2457	-.10 [-.16, -.04]	[-.17, -.02]	-.06 [-.11, -.01]	-.11 [-.21, -.01]	-.15 [-.33, .00]	.03 [-.30, .35][c]
Respect	7	1551	-.04 [-.12, .03]	[-.12, .03]	-.03 [-.09, .03]	-.02 [-.08, .04]	-.01 [-.09, -[d]]	_[d]
Popularity	32	9068	-.05 [-.09, -.01]	[-.10, -.01]	-.03 [-.07, .00]	-.07 [-.13, -.02]	-.17 [-.31, -.06]	-.13 [-.29, .04][c]
Leadership Emerg.	42	8208	-.05 [-.09, -.02]	[-.09, -.02]	-.05 [-.08, -.02]	-.05 [-.08, -.01]	-.10 [-.20, -.03]	-.10 [-.18, -.02][c]
Mixture	37	5530	-.06 [-.11, -.02]	[-.10, -.02]	-.05 [-.08, -.02]	-.05 [-.10, -.01]	-.07 [-.16, .00]	-.07 [-.14, .01][c]
Conscientiousness (exploratory)								

			Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
	k^a	N^a	r [95% CI]	[95% CI][b]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Influence	13	2340	.06 [.01, .12]	[.00, .12]	.05 [.00, .09]	.10 [.04, .17]	.15 [.05, .30]	.15 [.07, .24][c]
Respect	7	1551	.02 [-.04, .08]	[-.03, .07]	.01 [-.05, .06]	.01 [-.06, .09]	.00 [-.08, .17]	-.02 [-.07, .03][c]
Popularity	29	8956	.04 [.00, .07]	[-.01, .08]	.02 [-.02, .05]	.04 [-.01, .09]	.15 [.05, .31]	.12 [-.05, .28][c]
Leadership Emerg.	49	9944	.10 [.07, .13]	[.06, .13]	.08 [.05, .11]	.09 [.05, .12]	.07 [.02, .13]	.08 [.02, .13][c]
Mixture	29	4714	.05 [.01, .09]	[.01, .09]	.04 [.00, .08]	.04 [.00, .08]	.08 [.01, .22]	.09 [-.01, .19][c]
Openness (exploratory)								
Influence	14	2646	.12 [.07, .18]	[.06, .19]	.10 [.05, .15]	.12 [.04, .20]	.15 [.03, .28]	.19 [.11, .28][c]
Respect	7	1551	.05 [-.03, .12]	[-.05, .14]	.04 [-.02, .11]	.03 [-.07, .13]	.06 [-.08, .40]	-.02 [-.16, .11][c]
Popularity	25	6746	.00 [-.04, .04]	[-.02, .02]	.00 [-.04, .03]	-.01 [-.04, .01]	-.01 [-.04, .03]	_[d]
Leadership Emerg.	38	7882	.07 [.03, .11]	[.03, .11]	.06 [.03, .09]	.07 [.03, .11]	.11 [.04, .20]	.11 [.03, .19][c]
Mixture	29	4714	.07 [.03, .11]	[.04, .10]	.07 [.03, .11]	.07 [.04, .10]	.07 [.03, .15]	.08 [.04, .12][c]
Agreeableness[e] (exploratory)								
Influence	14	2241	.02 [-.05, .09]	[-.06, .11]	-.01 [-.07, .06]	.04 [-.04, .12]	.09 [-.03, .35]	-.02 [-.16, .12][c]
Respect	5	1024	.03 [-.08, .13]	[-.08, .13]	.02 [-.07, .11]	.00 [-.13, .13]	-.12 [-.21, -.02]	-.05 [-.29, .20][c]

	k^a	N^a	Multivariate models			Univariate models		
			Main analysis	Cluster robust standard errors	Without effects for which trait and status were rated by the same informant	No publication-bias adjustment	p-uniform*	Selection model approach
			r [95% CI]	[95% CI]^b	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
Popularity	18	4631	.12 [.07, .18]	[.06, .19]	.12 [.07, .17]	.13 [.07, .19]	.09 [.00, .19]	.09 [.04, .14]^c
Leadership Emerg.	33	7152	.05 [.00, .09]	[.00, .09]	.03 [-.01, .07]	.03 [-.01, .08]	.06 [.01, .11]	.15 [.03, .26]
Mixture	23	3144	.06 [.01, .12]	[.02, .11]	.06 [.01, .11]	.07 [.02, .11]	.07 [.01, .17]	.09 [.00, .19]^c

Note. A positive meta-analytic correlation (e.g., $r = .28$) means that higher values on the trait (e.g., physical size) tend to be accompanied by higher values on the status related outcome (e.g., influence). In the exploratory analysis (i.e., for all Big Five traits except for extraversion), p-uniform* was applied by assuming that publication bias was favoring statistically significant positive or negative effect sizes depending on whether the majority of significant effect sizes were positive or negative. In the exploratory analysis, the selection model approach was applied with three intervals of the selection model such that the publication probabilities of effect sizes that were statistically significant and positive, statistically significant and negative, and nonsignificant were allowed to differ. Multivariate model = a random-effects model with a single predictor (e.g., physical size) and multiple outcome variables (i.e., admiring respect, influence, popularity, and leadership emergence; e.g., Riley, 2009); univariate model = a *random-effects* model with a single predictor (e.g., physical size) and a single outcome variable (e.g., admiring respect); leadership emerg. = leadership emergence.

[a] The N and k were different for the robustness check without effects for which trait and status were rated by the same informant (see Table S14).

[b] The correlation in the analysis with cluster robust standard errors is always the same as the correlation in the main analysis. Thus, we did not report it.

[c] The R package weightr issued warnings. The results may be unstable due to a small number of statistically significant or nonsignificant effect sizes in the meta-analysis.

[d] The model or (parts of the) confidence interval were not estimated due to convergence issues or very small number of effect sizes.

[e] The effect sizes for agreeableness also entered into the meta-analysis for antagonism because antagonism was assessed with agreeableness measures in 82 of 168 samples. In the other 86 samples, antagonism was assessed with measures of honesty-humility, aggressiveness, externalization (e.g., externalization behavior), Machiavellianism, psychopathy, sadism, antagonistic narcissism, etc. (see Table S6).

Table 4

Heterogeneity in the Multivariate Random-Effects Meta-Analyses

Trait	τ [95% CI]	ρ [95% CI]	Q_E	p	I_R^2
Physical size	0.112 [0.056, 0.190]	1.00 [-.29, 1.00][a]	50.05	.001	44%
Antagonism	0.216 [0.193, 0.244]	.70 [.49, .83]	2994.48	< .001	91%
Assertiveness	0.177 [0.148, 0.212]	.42 [.13, .67]	591.32	< .001	88%
Cognitive ability	0.078 [0.045, 0.119]	.22 [-1.00, .97]	89.75	< .001	66%
Extraversion	0.114 [0.096, 0.135]	.32 [-.19, .70]	621.24	< .001	82%
Benevolent altruism	0.260 [0.194, -[b]]	-.54 [-[b], .75][a]	365.75	< .001	89%
Universal altruism	0.369 [0.247, 0.637]	.85 [.32, .97]	364.97	< .001	93%
Self-monitoring	0.123 [0.090, 0.164]	-.37 [-1.00, .45][a]	218.09	< .001	76%
Neuroticism	0.113 [0.091, 0.139]	.88 [.29, 1.00][a]	391.91	< .001	68%
Conscientiousness	0.102 [0.082, 0.126]	.97 [.16, 1.00][a]	357.8	< .001	58%
Openness	0.084 [0.065, 0.107]	.59 [-.27, 1.00]	253.43	< .001	64%
Agreeableness	0.103 [0.081, 0.131]	.55 [-.39, 1.00]	246.29	< .001	70%

Note. τ = estimated between-study standard deviation component corresponding to the effects of all status related outcomes—we presented the standard deviation (τ) rather than the variance (τ^2) in the table because the standard deviation values are easier to interpret; ρ = correlation coefficient for the correlations between the effects of all pairs of status related outcomes; Q_E = Test for residual heterogeneity; I_R^2 = the proportion of the variance in a multivariate random-effects model that is due to between-study heterogeneity rather than within-study sampling error (Jackson et al., 2012).

[a] The value of ρ is unexpectedly large and small, respectively, given how strongly the status related outcomes are correlated with each other (Tables 2 and S13). Unexpected ρ values commonly occur when the number of studies is small or the within-study variation is relatively large (Riley et al., 2007). Extreme ρ values do not cause systematic bias in the pooled estimates and produce conservative standard errors.

[b] We could not obtain the upper bound for τ and the lower bound for ρ due to convergence problems.

Table 5

Are Dominance-Related Traits More Strongly Positively Associated With the Attainment of Social Influence Than With the Attainment of Admiring Respect and Popularity?

Trait	Outcome 1	Outcome 2	r_1	r_2	Δ z	One-tailed p	Δ z	One-tailed p	r_1	r_2	Δ z	One-tailed p
			Main analysis				**Cluster robust standard errors**		**Without effects for which trait and status were rated by same informant**			
Physical size	Influence	Respect	.28	.03	3.52	< .001	4.53	< .001	.28	.03	2.91	.002
Physical size	Influence	Popularity	.28	.11	2.51	.006	2.92	.002	.28	.11	2.05	.020
Antagonism	Influence	Respect	.02	-.15	2.70	.003	2.95	.002	.03	-.04	2.05	.020
Antagonism	Influence	Popularity	.02	-.13	2.85	.002	3.29	.001	.03	-.10	4.14	< .001
Assertiveness	Influence	Respect	.22	.14	0.91	.183	1.67	.048	.25	.12	2.84	.002
Assertiveness	Influence	Popularity	.22	.04	3.07	.001	3.54	< .001	.25	.02	6.96	< .001

Note. A positive meta-analytic correlation (e.g., $r_1 = .28$) means that higher values on the trait (e.g., physical size) tend to be accompanied by higher values on the status related outcome (e.g., influence).

Table 6

Results for Moderation Analyses (Hypotheses 4, 5, 7, 10, and 11)

Trait	Moderator	Main analysis				Cluster robust standard errors		Without effects for which trait and status were rated by same informant			
		k	N	b [95% CI]	p	[95% CI][a]	p	k	N	b [95% CI]	p
Cognitive ability	Task complexity	48	6506	0.00 [-0.04, 0.05]	.426	[-0.04, 0.05]	.424	48	6506	0.00 [-0.04, 0.05]	.426
Extraversion	Task interdependence	169	30188	-0.02 [-0.05, 0.00]	.972	[-0.05, 0.00]	.964	165	29604	-0.02 [-0.05, 0.00]	.968
Universal altruism	Individualism	19	2212	0.04 [-0.09, 0.16]	.289	[-0.10, 0.17]	.283	12	1238	0.00 [-0.02, 0.03]	.407
Assertiveness	Length of acquaintance	98	13921	-0.02 [-0.07, 0.02]	.132	[-0.08, 0.03]	.169	90	13149	-0.01 [-0.05, 0.02]	.265
Extraversion	Length of acquaintance	162	29141	0.00 [-0.03, 0.02]	.750	[-0.03, 0.02]	.711	157	28451	0.00 [-0.03, 0.02]	.740
Self-monitoring	Length of acquaintance	56	5651	0.03 [-0.01, 0.07]	.952	[0.00, 0.07]	.966	55	5345	0.03 [-0.01, 0.07]	.945
Cognitive ability	Length of acquaintance	45	5961	-0.06 [-0.11, -0.01]	.993	[-0.11, -0.01]	.991	45	5961	-0.06 [-0.11, -0.01]	.993
Physical size	Length of acquaintance	23	1906	0.05 [-0.03, 0.12]	.107	[-0.03, 0.12]	.094	23	1906	0.05 [-0.03, 0.12]	.107
Benevolent altruism	Length of acquaintance	31	5566	-[b]	-[b]	-[b]	-[b]	13	1382	-[b]	-[b]
Universal altruism	Length of acquaintance	19	2212	0.15 [0.00, 0.30]	.025	[0.04, 0.26]	.008	12	1238	0.02 [-0.03, 0.07]	.178

Note. We investigated whether the association between social status and the respective trait was moderated by another variable with multivariate random-effects models with all five status outcomes as endpoints. A positive effect size (e.g., $b = 0.15$) means that higher values on the moderator (e.g., length of acquaintance) tend to be accompanied by a more positive association between the trait (e.g., universal altruism) and status related outcomes. We did not differentiate between the five social status outcomes in the test of the moderation effect because the number of effect sizes in the meta-analyses was not large enough. We ran separate multivariate meta-analyses for each moderator. All moderator variables were standardized prior to the moderation analysis. All *p*-values are one-tailed except for the p-value for extraversion and length of acquaintance. The *p*-
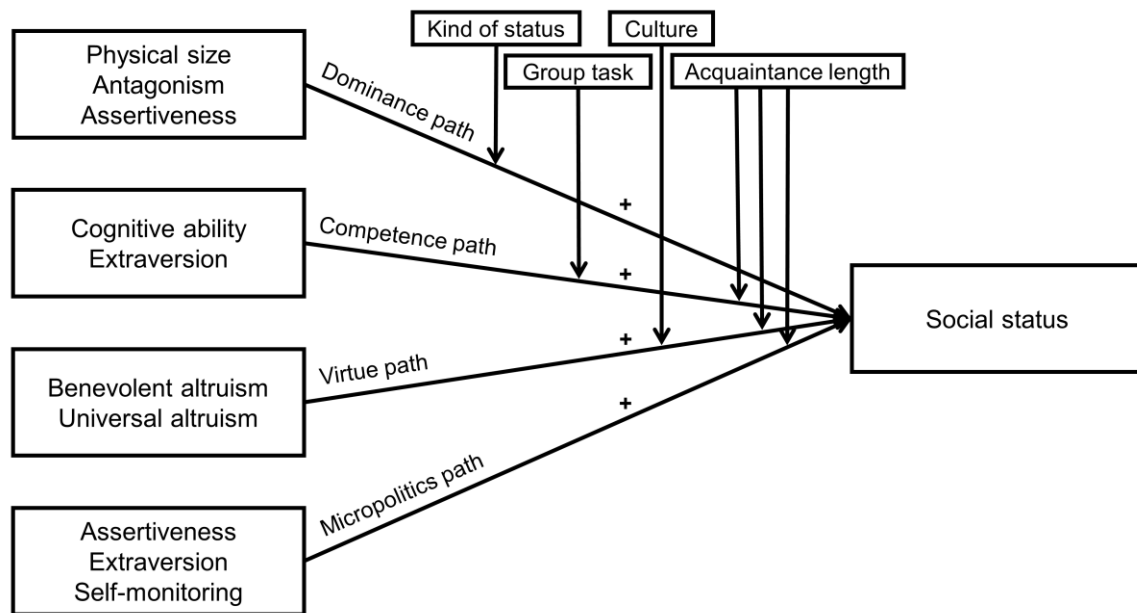
value extraversion and length of acquaintance is two-tailed because for this moderation effect we made predictions in both directions (H10 and H11; Table S1). k = number of effect sizes.

[a] The effect size in the analysis with cluster robust standard errors is always the same as the effect size in the main analysis. Thus, we did not report it.
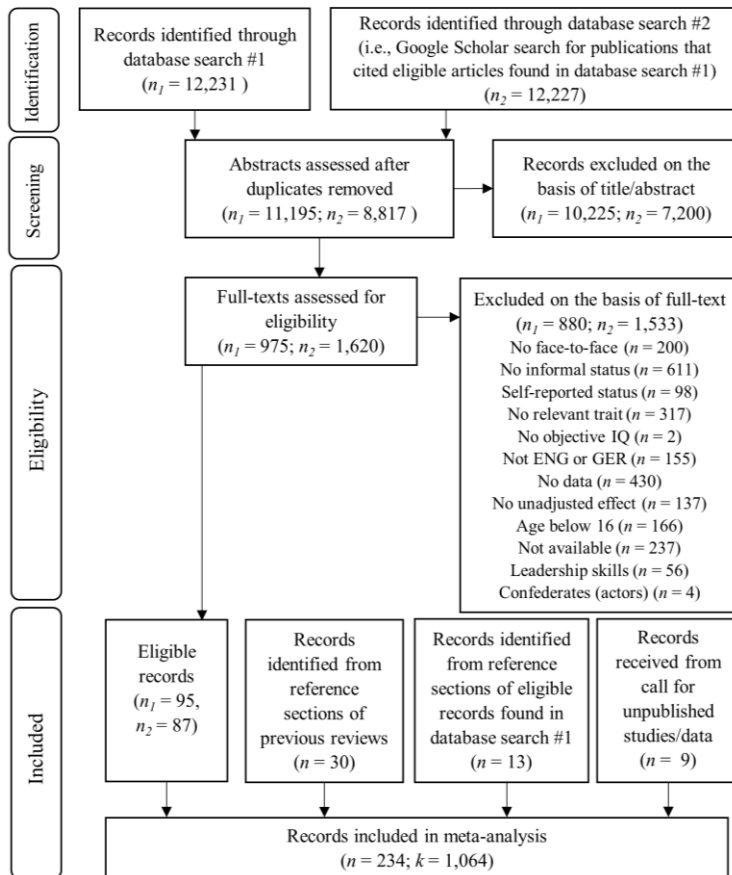
[b] We did not test the hypothesis for benevolent altruism because there was hardly any variation in length of acquaintance among the effects for benevolent altruism. Among the 31 available effects for benevolent altruism, 29 effects were from samples with the same length of acquaintance.
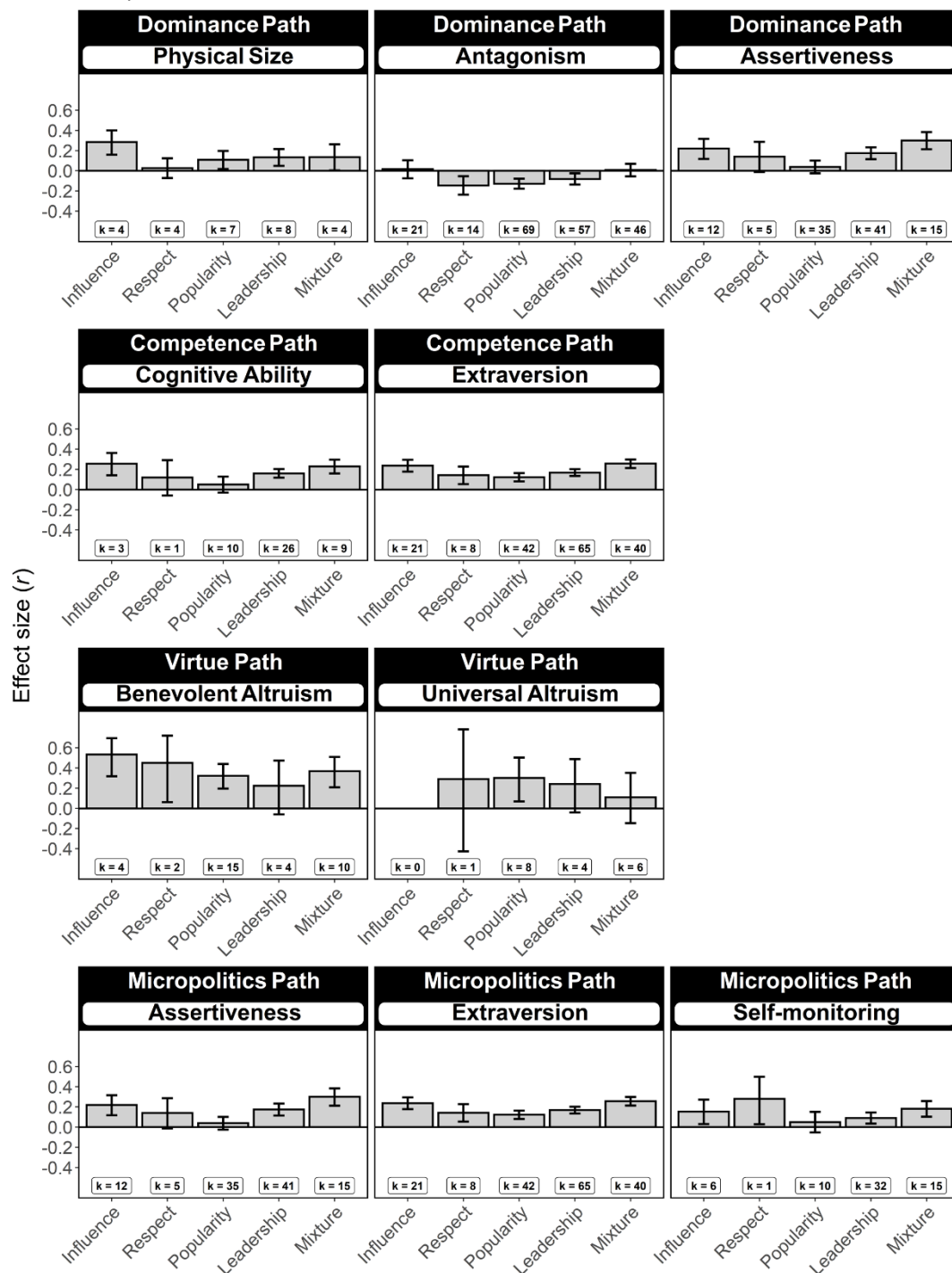
Figure 1

Theoretical Paths From Personality Traits, Cognitive Abilities, and Physical Size to Social Status Attainment

Physical size
Antagonism
Assertiveness

Cognitive ability
Extraversion

Benevolent altruism
Universal altruism

Assertiveness
Extraversion
Self-monitoring

Kind of status

Culture

Group task

Acquaintance length

Dominance path

Competence path

Virtue path

Micropolitics path

Social status

Note. The graph illustrates the paths from traits to social status attainment in face-to-face groups that we derived from the dominance–prestige account of hierarchy differentiation (Cheng et al., 2013; Henrich & Gil-White, 2001), the moral virtue theory of status attainment (Bai, 2017; Bai, Ho, & Yan, 2020), and the micropolitics model of status hierarchies (Anderson & Cowan, 2014; Anderson & Kennedy, 2012). The vertical arrows indicate the moderating effects of kind of status related outcome (e.g., attention vs. admiring respect), nature of the group task (e.g., physicality of the group task), culture (collectivism/individualism), or length of acquaintance.

Figure 2

PRISMA Flow Diagram

Note. *n* = number of records (incl. publications and unpublished studies/data). The number of records (*n*) differed from the number of effect sizes (*k*) because the same record often contained several effect sizes. The number of *abstracts assessed after duplicates removed* should be equal to the sum of *records excluded on the basis of title/abstract* and *full-texts assessed for eligibility*. However, we noticed that for both of our database searches, there are minor discrepancies (i.e., 5 records for database search #1 and 3 records for database search #2). Probable reasons for these discrepancies are that records were accidentally assigned to more than one exclusion category or that records from sources other than our database searches (e.g., reference sections of previous reviews) were added to the Citavi project but later excluded from the meta-analysis and erroneously assigned to one of the exclusion categories. Importantly, these discrepancies are minor and they only affect the flow diagram *not* the substantial results of the meta-analysis. ENG = English; GER = German.
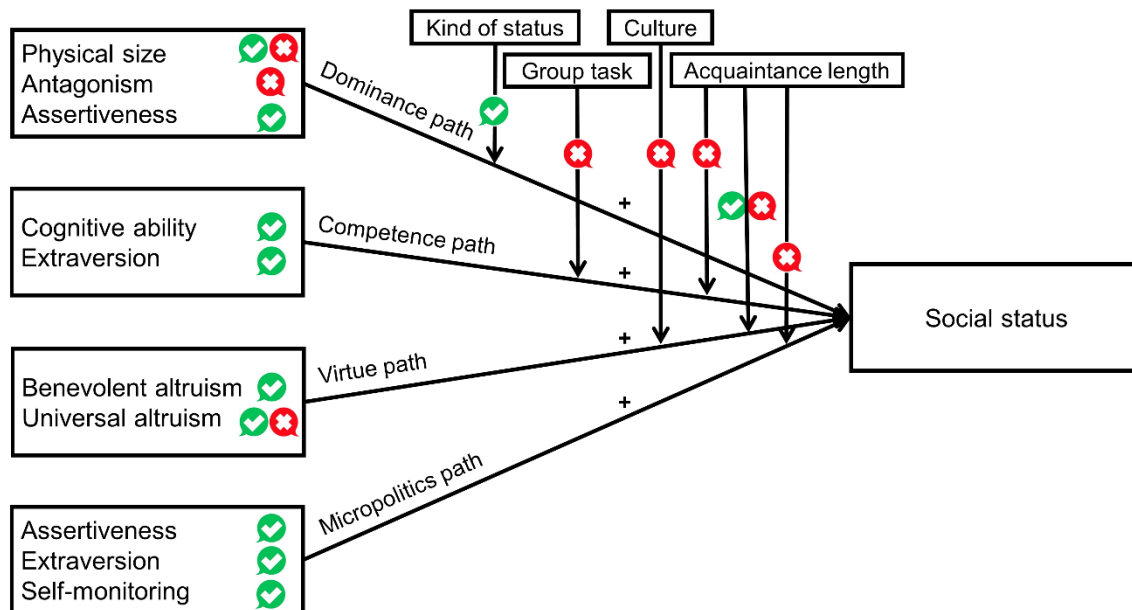
Figure 3

Meta-Analytic Correlations Between Traits and Status Related Outcomes

Note. The meta-analytic effect sizes (*r*) between all traits and attainment of any of the five status related outcomes were obtained from multivariate random-effects models. A positive meta-analytic correlation (e.g., *r* = .28) means that higher values on the trait (e.g., physical size) tend to be accompanied by higher values on the status related outcome (e.g., influence). The displayed effect sizes are uncorrected for measurement error. The error bars indicate 95%

confidence intervals. The results for assertiveness and extraversion are displayed twice in the

figure because assertiveness and extraversion were hypothesized to lead to status via two

paths (Figure 1). k = number of effect sizes.

Figure 4

Support (Check Mark) or Lack of Support (Cross) for Each Hypothesis

Note. The figure displays an interpretative summary of the results of the hypotheses tests (for detailed results, see Table 3 and Figure 3). The lack of support for a hypothesis might be a consequence of limited statistical power that especially affected the moderation analyses. More research on the unsupported moderation hypotheses is needed.