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Moral vs Agentic Self-Superiority and Self-Esteem: The Role of Trait Properties

RESEARCH

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ABSTRACT

People generally believe that they are better than others. This perceived self-superiority is stronger for moral (vs agentic) traits, whereas self-esteem mainly correlates with individual differences in agentic self-superiority beliefs. We replicated these seemingly contradictory findings within a single design in two studies that also examined the role of various properties of moral and agentic traits (controllability, verifiability, frequency of feedback, ambiguity, breadth, being typically human, taken-for-grantedness). The morality-agency difference in perceived self-superiority was partially mediated by the differential controllability, being typically human, and taken-for-grantedness of moral and agentic traits, but the lower verifiability of moral traits suppressed, rather than accounted for, the greater strength of moral self-superiority (Study 2). The stronger correlation between agentic self-superiority beliefs and self-esteem was moderated by differences between the traits' controllability, verifiability, and being typically human (Study 2). Participants with low self-esteem showed self-superiority beliefs on morality traits only, whereas those with higher self-esteem also showed self-superiority beliefs on agentic traits (Studies 1–2). We discuss implications for a better understanding of the nature, causes, and correlates of perceived self-superiority.

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Most people view themselves as better than others (Alicke, 1985; Brown, 1986; Codol, 1975; for a review see Zell et al., 2020). Because it is often difficult to assess the validity of an individual's assumed self-superiority (Krueger et al., 2017), we call that a *belief* rather than a *bias* or *error*. Perceived self-superiority is stronger on morality than on agency (Allison et al., 1989; Tappin & McKay, 2017; Xiao et al., 2021). Because perceived self-superiority particularly occurs in personally important domains (Brown, 2012), this suggests an important role of morality for people's self-views. However, self-esteem correlates more strongly with agentic than with moral self-superiority beliefs (e.g., Tappin & McKay, 2017), suggesting a more important role of agency for self-esteem (for a review see Abele & Hauke, 2020). We sought to reconcile these contradictory observations (cf. Hauke, 2017, p. 7, who also noted the contradiction) by comparing self-superiority beliefs for morality and agency and examining how they relate to self-esteem and to properties of moral vs agentic traits.

As we will explain below, agency consists of the facets ability and assertiveness whereas morality is a facet of the broader dimension of communion (the other facet being friendliness). However, in keeping with previous research (e.g., Allison et al., 1989), we focus on the comparison between agency and morality (rather than agency and communion).

MEASURING SELF-SUPERIORITY BELIEFS

Two approaches for measuring self-superiority beliefs dominate the field, the direct approach and the indirect approach. The 'direct' approach, used in our studies, involves having participants judge themselves compared to the average peer or to most peers. The 'indirect' approach involves asking participants to judge the self and the average peer separately; the researchers then calculate the difference between these two targets.

The direct approach for measuring self-superiority beliefs has been criticized on several grounds (Krueger et al., 2013; Krueger & Mueller, 2002). First, in the direct approach, relative self-judgments obscure information about the perceived absolute position of the self and the average other on the comparison continuum (Heck & Krueger, 2015; we use the word 'continuum' because the more common word 'dimension' might create confusion with the two basic dimensions agency and communion). Second, giving relative self-judgements presumably requires people to separately judge themselves and the average person, evaluate the difference and translate that evaluation into a single response (e.g., Krueger & Wright, 2011). Third, relative self-judgments correlate strongly with absolute self-judgments but only weakly with absolute other-judgments (Klar & Giladi, 1999; Kruger, 1999), which has been taken as evidence that, due to people's cognitive egocentrism, absolute self-judgments dominate relative self-judgments (see also Christian et al., 2014).

Still, the direct measure is arguably more valid than has sometimes been assumed. One reason is that human judgment is generally comparative (Mussweiler, 2003; Unkelbach et al., 2023). The finding that directly measured self-superiority beliefs vary as a function of the referent groups being proposed to participants shows that relative self-judgments cannot merely reflect absolute self-judgments (Alicke et al., 1995). Moreover, interpreting the correlation between relative and absolute self-judgments as evidence that relative self-judgments rest upon absolute ones boils down to a causal interpretation of correlational findings. Any causal interpretation, if one is warranted at all, might as well go in the opposite direction. In fact, the interpretation that the correlation occurs because people derive absolute self-judgments from relative self-judgments (rather than vice versa) would be consistent with social comparison theory (Festinger, 1954).

PERCEIVED SELF-SUPERIORITY ON THE DIMENSIONS AND FACETS OF SOCIAL PERCEPTION, AND SELF-ESTEEM

Most researchers distinguish between two broad dimensions of social perception. We will denote these dimensions with the terms communion, for traits of relevance to how one interacts with others, and agency, for traits of relevance to achieving personal goals (for a review of other terms used to denote them, see Abele et al., 2021). Each dimension includes two facets (Abele et al., 2016). Communion includes morality (how decently one treats others, e.g., honesty) and friendliness (how pleasant one is, e.g., warmth); agency includes ability (skill-related traits, e.g., creativity) and assertiveness (traits that reflect the drive to attain goals, e.g., persistence).

Greater perceived self-superiority occurs on communion than on agency (Abele & Hauke, 2020; Allison et al., 1989; Ybarra et al., 2012). Within communion, perceived self-superiority is greater on morality than on friendliness (Tappin & McKay, 2017)—a finding that has inspired the label 'holier than thou' phenomenon (Epley & Dunning, 2000). Importantly, people typically show greater self-superiority beliefs on traits that are important to them (Brown, 2012; Sedikides & Strube, 1997). These two findings combined may be considered evidence for the primordial importance of morality for people's self-view (Brambilla & Leach, 2014). That interpretation is in line with evidence that people view their and other

people's 'true selves' in moral terms (Newman et al., 2014; Strohminger & Nichols, 2014). However, agentic (vs moral) self-superiority beliefs correlate more strongly with self-esteem (Tappin & McKay, 2017). That finding has been taken as evidence for the greater importance of agency (vs morality) for people's self-esteem (Gebauer et al., 2013; Wojciszke, 2005).

There are at least two potential explanations for the seemingly conflicting findings. The first is that most people hold moral self-superiority beliefs, whereas only those with high self-esteem also hold agentic self-superiority beliefs (cf. Hauke, 2017). The second is that moral traits have properties that promote perceived self-superiority whereas agentic traits have properties that promote an association of self-superiority beliefs with self-esteem. We discuss some potentially relevant properties below.

PROPERTIES OF MORAL AND AGENTIC TRAITS

People generally view moral traits as more controllable (Van Lange & Sedikides, 1998; Wojciszke et al., 1998), harder to verify (Van Lange & Sedikides, 1998), and more 'typically human' (Haslam et al., 2012) than agentic traits. People arguably also receive feedback more often about their agentic than their moral qualities, e.g., in performance reviews (Krueger & Wright, 2011). Thus, the differential perceived controllability, verifiability, being typically human, and availability of feedback about moral vs agentic traits may contribute to the morality-agency difference in perceived self-superiority (Sedikides & Alicke, 2012).

Another potentially relevant property is trait ambiguity, which may be defined either as the extent to which traits can be interpreted in different ways (Felson, 1981) or as the broadness of the range of behaviors or contexts for which they are relevant (Dunning et al., 1989)—with the latter operationalization also having been called trait breadth (Hampson et al., 1986). If people perceive moral traits as more ambiguous than agentic traits, that property, too, may entail greater perceived self-superiority on morality.

Research that tests how these trait properties may contribute to stronger perceived self-superiority on morality vs agency is scarce. Some properties are known to be associated with greater perceived self-superiority. People do show greater self-superiority on traits that they perceive as personally controllable than on traits that they perceive as not so personally controllable (Alicke, 1985; Ziano et al., 2021). People also view themselves as possessing more of traits that are typically human than others (Cypryańska et al., 2017; Haslam et al., 2005). Moreover, people particularly show self-superiority on ambiguous traits because these allow room for construing self-serving trait definitions or selecting favorable information about the self (Critcher et al., 2011; Dunning et al., 1989; Dunning & Cohen, 1992).

However, it is unclear to what extent these properties explain the morality-agency difference. We know of one study that examined the role of controllability and verifiability in the greater self-superiority on a single moral trait—honesty—than on a single agentic trait—intelligence (Van Lange & Sedikides, 1998). Participants in that study found honesty more controllable and less verifiable than intelligence, but neither property mediated their greater self-superiority on honesty than on intelligence. We are not aware of any research exploring the role of the trait properties in the relationship between self-superiority and self-esteem.

One final trait property that may be relevant is taken-for-grantedness, i.e., the extent to which people assume everyone will have some minimal level of a certain trait. However, as already noted by Hauke (2017), it is hard to predict how this variable would be associated with perceived self-superiority. On the one hand, people may be more reluctant to claim self-superiority on a trait that they take for granted (as everyone else presumably has it). On the other hand, they may claim greater self-superiority on the trait if they interpret taken-for-grantedness as a normative rather than as a descriptive feature. From that point of view, people can view themselves as conforming better with the norm than others. Along these lines, Codol (1975) described perceived self-superiority as 'superior conformity of the self.'

THE CURRENT RESEARCH

We sought to reconcile the findings that perceived self-superiority is greater for moral than for agentic traits and that agentic self-superiority beliefs are more strongly correlated with self-esteem. With that aim, we conducted two studies that measured participants' self-superiority beliefs, their self-esteem, and perceived trait properties. In Study 1, the properties were controllability, verifiability, frequency of feedback, and ambiguity. In Study 2, they were controllability, verifiability, ambiguity, breadth, being typically human, and taken-for-grantedness.

We preregistered the predictions, sample sizes, stopping criteria, data exclusion criteria, and details about the statistical analyses on the Open Science Framework before data collection. The preregistrations are available at https://osf.io/d2ft4/. Four remarks are in order about them. First, we preregistered predictions concerning explicitly measured self-esteem only but (for exploratory reasons) measured self-esteem implicitly as well. Second, we preregistered that we would do mediation analyses using the PROCESS macro for SPSS. Because this macro only allows between-subjects mediation

analyses, we planned to transform within-subjects variables into between-subjects variables. Since then, we have become familiar with the MEMORE macro in SPSS, which allows for within-subjects mediation analyses. We have therefore used the MEMORE macro instead of the PROCESS macro. Third, we preregistered predictions for all trait properties, but erroneously failed to specify the predictions for taken-for-grantedness (Study 2) as a function of trait valence and the assumed normative interpretation of the property by participants. Because that specification was essential, we present analyses and interpretations involving taken-for-grantedness as exploratory. The mediation analyses and the analyses on taken-for-grantedness were the only deviations from the preregistrations. Finally, as preregistered, the stopping rule for data collection was a set date for both studies. We did not need to use the back-up option for further data collection that was mentioned in the preregistration because we reached the intended sample size within the foreseen time window.

This paper focuses on the preregistered predictions concerning the morality-agency contrast and the relationship between self-superiority beliefs and explicitly measured self-esteem. We report additional analyses, including exploratory analyses concerning implicitly measured self-esteem, comparisons among the four facets of social cognition, and intercorrelations of variables in the Supplemental Materials. The Social and Societal Ethics Committee at KU Leuven approved both studies (Study 1: G-2021-3015-R3[AMD]; Study 2: G-2021-3015-R4[AMD]).

STUDY 1

Study 1 tested the prediction that people's reports of greater moral (vs agentic) self-superiority might be mediated by one or several of the known correlates of self-superiority beliefs: greater controllability, lower verifiability, lower frequency of feedback, and greater ambiguity (applicable to more behaviors or contexts). It also tested the prediction that the correlation between self-esteem and self-superiority would be stronger for agentic (vs moral) traits because agentic traits are less controllable, more verifiable, more frequently the subject of feedback, and/or less ambiguous. These predictions were based on two assumptions. One is that when people with lower self-esteem are requested to provide a series of relative self-judgments, they are likely to admit non-superiority on a sizeable proportion of the items in the questionnaire (rather than claiming self-superiority on most or all items). The second is that because agentic traits have the qualities listed above, people with lower self-esteem are likely to pick those to admit non-superiority on.

METHOD

Participants

One hundred forty-nine bachelor's degree-level students at KU Leuven participated for course credit. As preregistered, we excluded participants whose response time deviated more than three *SD*s from the mean ($n = 3$) or who did not reach the end of the survey ($n = 12$). This left 134 responses (62% women, $M_{age} = 19.40$, $SD_{age} = 1.70$). About one third of all students enrolled in the course in the context of which this study was conducted participated. Sensitivity analyses using G*Power revealed that this yielded 80% power to detect a small difference between two within-subjects valence conditions ($f = 0.12$), and to detect a minimum correlation of $r = .24$.

Materials and design

Stimulus traits

We created a pool of 64 traits, half positive and half negative, with 16 traits for each of the four facets.[1] We randomly distributed the traits over four lists, with the restriction that each list should include two positive and two negative traits for each facet (16 traits in total). Each participant responded to one trait list. The study thus had a 2 (valence: positive, negative) × 4 (facet: morality, friendliness, ability, assertiveness) within-subjects design, with four different trait lists. Traits appeared in an order that was randomized per judgment task. The Cronbach's alpha of the self-superiority questionnaire was acceptable for morality (.65), but low for friendliness (.47), ability (.23), and assertiveness (.43). As preregistered, we proceeded with the analysis despite the low reliabilities. We revisit this issue in the discussion section.

Self-superiority

Participants reported how much they possessed each trait as compared to the average peer of their age, gender, and study major (−3 = *much less*, +3 = *much more*). We recoded ratings on negative traits, such that positive scores always indicated self-superiority.

Trait controllability, verifiability, frequency of feedback, and ambiguity

Participants rated the controllability, verifiability, frequency of feedback, and ambiguity of each trait, where 1 = *completely uncontrollable*, *very difficult to verify*, *never*, *very unambiguous* (respectively); and 7 = *completely controllable*, *very easy to verify*, *always*, *very ambiguous* (respectively). The instructions specified that a trait was controllable if people could with realistic effort change the extent to which they had that trait for the better; verifiable if others could easily determine the extent to which one possesses it; and ambiguous if it could refer to many different types of behaviors. The instructions further specified that 'feedback' referred to

verbal or non-verbal expressions of how one perceives an individual.

Explicit self-esteem

We used the Rosenberg Self-Esteem Scale (RSES; Franck et al., 2008; Rosenberg, 1965). Participants indicated their agreement with 10 statements (e.g., 'I feel that I am a person of worth'), on a Likert scale from 1 = *strongly disagree* to 4 = *strongly agree* (after reverse-coding negatively worded items: $\alpha = .91$; $M = 2.78$, $SD = 0.55$). We also used a translation of the Lifespan Self-Esteem Scale (LSES; Harris et al., 2018). Participants answered four questions (e.g., 'How do you feel about yourself?'), on a Likert scale from 1 = *very sad* to 5 = *very happy* ($\alpha = .90$; $M = 3.39$, $SD = 0.74$). RSES and LSES scores were strongly correlated, $r = .79$, $p < .001$. As preregistered, we created a composite index by averaging standardized scores (for exploratory separate analyses on RSES and LSES, see the Supplemental Materials). Higher self-esteem scores indicated greater self-esteem.

Implicit self-esteem

We used two frequently used implicit measures of self-esteem: a Name-Letter Task (for a review, see Hoorens, 2014) and the Name-Liking Task (Gebauer et al., 2008; see the Supplemental Materials for details).

Procedure

The study was conducted online using Qualtrics. As part of an active informed consent procedure, participants read that the study was about how people evaluate themselves and symbols (the latter being of relevance for the implicit measures). Half of the participants did the tasks in the following order: self-superiority, two of the trait properties, implicitly measured self-esteem, two more of the trait properties, and explicitly measured self-esteem. The other half completed the session in the reversed order. The order of the trait property tasks was counterbalanced. Finally, participants reported their age and gender, responded to foreknowledge and suspicion probes, and indicated how seriously they had filled out the survey.

RESULTS

In this and the next study, we analyzed the data using SPSS 29.0. The two-tailed significance level was .05. We conducted a number of sets of analyses: We subjected self-superiority scores and trait property ratings to 2 (valence) × 4 (facet) doubly-repeated measures analyses of variance (ANOVA) and examined the facet factor by conducting planned contrasts between morality and agency. In addition, we compared correlations between self-superiority on the different facets and self-esteem. We also conducted a number of mediation analyses (model 1 in MEMORE macro; Montoya & Hayes, 2017) and moderation analyses (model 1 in PROCESS macro; Hayes, 2018), using 5,000 bootstrap samples. Table 1 presents descriptives for self-superiority scores and trait property ratings, and Pearson correlations between self-esteem and self-superiority scores for both studies.

	AGENCY	COMMUNION	MORALITY	FRIENDLINESS	ABILITY	ASSERTIVENESS
	STUDY 1 (*N* = 134)					
Self-superiority	**0.22 (0.64)**	0.75 (0.69)	**0.92 (0.84)**	0.58 (0.81)	0.23 (0.74)	0.21 (0.85)
Controllability	**3.84 (0.83)**	4.53 (0.79)	**4.48 (1.05)**	4.57 (0.83)	3.54 (1.04)	4.13 (0.96)
Verifiability	**4.57 (0.72)**	4.49 (0.61)	**3.93 (1.02)**	5.05 (0.76)	4.53 (0.88)	4.61 (0.88)
Feedback	**4.06 (0.72)**	3.92 (0.75)	**3.67 (0.94)**	4.18 (0.86)	4.14 (0.89)	3.98 (0.83)
Ambiguity	**4.31 (0.86)**	4.18 (0.83)	**4.29 (1.00)**	4.07 (0.98)	4.45 (1.03)	4.18 (0.96)
Correlation Self-Esteem	**.39*** **	.19*	**.01**	.31***	.20*	.41***
Positive traits						
Self-superiority	**0.16 (0.78)**	0.90 (0.76)	**0.96 (0.97)**	0.87 (0.90)	0.15 (0.91)	0.19 (1.07)
Controllability	**3.92 (0.91)**	4.83 (0.93)	**4.46 (1.25)**	5.22 (1.07)	3.54 (1.28)	4.29 (1.03)
Verifiability	**4.65 (0.88)**	4.71 (0.84)	**3.93 (1.25)**	5.48 (0.95)	4.54 (1.13)	4.77 (1.10)
Feedback	**4.30 (0.85)**	4.36 (1.01)	**3.71 (1.20)**	4.99 (1.13)	4.34 (1.04)	4.25 (1.01)
Ambiguity	**4.51 (1.11)**	4.16 (1.57)	**4.29 (1.34)**	4.08 (1.52)	4.68 (1.37)	4.35 (1.24)
Correlation Self-Esteem	**.37*** **	.08	**−.01**	.14	.22*	.36***
Negative traits						
Self-superiority	**0.29 (0.90)**	0.61 (0.95)	**0.90 (1.12)**	0.31 (1.26)	0.31 (1.09)	0.28 (1.16)
Controllability	**3.77 (0.97)**	4.22 (0.94)	**4.51 (1.20)**	3.91 (1.16)	3.56 (1.14)	3.97 (1.29)

(Contd.)

	AGENCY	COMMUNION	MORALITY	FRIENDLINESS	ABILITY	ASSERTIVENESS
	STUDY 1 (*N* = 134)					
Verifiability	**4.49 (0.84)**	4.27 (0.74)	**3.93 (1.20)**	4.60 (1.11)	4.51 (1.06)	4.44 (1.08)
Feedback	**3.82 (0.96)**	3.49 (0.99)	**3.61 (1.32)**	3.34 (1.13)	3.93 (1.23)	3.69 (1.10)
Ambiguity	**4.13 (0.97)**	4.19 (0.89)	**4.31 (1.19)**	4.06 (1.28)	4.21 (1.27)	4.02 (1.23)
Correlation Self-Esteem	**.23****	.21*	**.03**	.28***	.09	.27**
	STUDY 2 (*N* = 316)					
Self-superiority	**0.23 (0.66)**	0.90 (0.70)	**1.02 (0.71)**	0.78 (0.82)	0.34 (0.69)	0.12 (0.83)
Controllability	**3.75 (0.72)**	4.73 (0.79)	**4.75 (0.94)**	4.71 (0.82)	3.55 (0.87)	3.94 (0.80)
Verifiability	**4.51 (0.65)**	4.68 (0.70)	**4.10 (0.89)**	5.27 (0.85)	4.57 (0.79)	4.46 (0.73)
Ambiguity	**3.95 (0.79)**	3.69 (0.90)	**3.56 (0.99)**	3.81 (0.98)	4.09 (0.97)	3.81 (0.86)
Breadth	**4.57 (0.75)**	4.62 (0.81)	**4.37 (0.90)**	4.87 (0.92)	4.60 (0.84)	4.54 (0.83)
Typicality[a]	**3.83 (0.86)**	4.08 (0.89)	**4.15 (0.95)**	4.01 (0.99)	3.84 (0.97)	3.83 (0.90)
Grantedness[b]	**3.41 (0.73)**	3.69 (0.66)	**3.64 (0.73)**	3.74 (0.71)	3.34 (0.77)	3.47 (0.78)
Correlation RSES[c]	**.54*****	.24***	**.15****	.29***	34***	.57***
Correlation LSES[d]	**.43*****	.26***	**.13***	.33***	.25***	.47***
Positive traits						
Self-superiority	**0.11 (0.68)**	0.81 (0.68)	**0.87 (0.71)**	0.76 (0.85)	0.18 (0.77)	0.03 (0.91)
Controllability	**3.94 (0.81)**	4.83 (1.04)	**4.83 (1.15)**	4.82 (1.17)	3.76 (0.99)	4.12 (0.93)
Verifiability	**4.78 (0.81)**	4.77 (0.79)	**4.11 (1.13)**	5.44 (0.96)	4.76 (0.96)	4.79 (0.99)
Ambiguity	**3.87 (1.01)**	3.79 (1.13)	**3.64 (1.22)**	3.93 (1.30)	4.15 (1.21)	3.58 (1.15)
Breadth	**4.71 (0.90)**	4.90 (0.92)	**4.59 (1.08)**	5.21 (1.07)	4.70 (1.06)	4.72 (1.05)
Typicality[a]	**3.86 (1.11)**	4.16 (1.14)	**4.02 (1.23)**	4.29 (1.31)	3.97 (1.33)	3.74 (1.21)
Grantedness[b]	**3.53 (0.96)**	4.63 (1.10)	**4.56 (1.27)**	4.70 (1.09)	3.40 (1.04)	3.65 (1.04)
Correlation RSES[c]	**.46*****	.20***	**.09**	.24***	.25***	.47***
Correlation LSES[d]	**.36*****	.21***	**.05**	.29***	.19***	.38***
Negative traits						
Self-superiority	**0.35 (0.78)**	0.99 (0.86)	**1.17 (0.92)**	0.81 (0.97)	0.50 (0.86)	0.20 (0.98)
Controllability	**3.56 (0.89)**	4.64 (0.95)	**4.67 (1.13)**	4.61 (1.01)	3.34 (1.07)	3.78 (1.03)
Verifiability	**4.25 (0.80)**	4.59 (0.99)	**4.09 (1.16)**	5.09 (1.13)	4.37 (0.97)	4.12 (0.96)
Ambiguity	**4.04 (0.90)**	3.59 (0.99)	**3.48 (1.14)**	3.69 (1.14)	4.03 (1.15)	4.04 (1.05)
Breadth	**4.43 (0.90)**	4.34 (1.11)	**4.15 (1.25)**	4.53 (1.20)	4.49 (1.03)	4.36 (1.01)
Typicality[a]	**3.80 (1.00)**	4.01 (1.04)	**4.29 (1.24)**	3.72 (1.08)	3.70 (1.16)	3.91 (1.16)
Grantedness[b]	**3.28 (0.93)**	2.75 (0.92)	**2.73 (1.08)**	2.78 (0.94)	3.28 (1.00)	3.29 (1.00)
Correlation RSES[c]	**.51*****	.24***	**.15****	.27***	.33***	.53**
Correlation LSES[d]	**.41*****	.25***	**.17****	.30***	.24***	.45***

Table 1 Means (*SD*s between brackets) of Self-Superiority Scores and Trait Properties and Correlations with Explicit Self-Esteem Scores.

Note. [a]Typicality = Being typically human. [b]Grantedness = Taken-for-grantedness. [c]Correlation RSES = Pearson correlation with RSES scores. [d]Correlation LSES = Pearson correlation with LSES scores. *$p < .05$, **$p < .01$, ***$p < .001$.

Moral vs agentic self-superiority beliefs and their correlations with self-esteem

The ANOVA on self-superiority scores revealed a main effect of facet, $F(3, 133) = 29.91$, $p < .001$, $\eta_p^2 = .18$. To contrast morality vs agency, we combined agency's separate facets, i.e., ability and assertiveness. As predicted, self-superiority was greater on morality than on agency, $F(1, 133) = 72.11$, $p < .001$, $\eta_p^2 = .35$. Facet interacted with

valence (the difference was bigger for positive traits), $F(3, 133) = 8.09$, $p < .001$, $\eta_p^2 = .06$, but the morality-agency difference held for both valences, Fs(1, 133) ≥ 32.54, ps < .001, η_p^2s ≥ .20. The valence main effect was not significant, $F(1, 133) = 1.58$, $p = .211$, $\eta_p^2 = .01$. Explicit self-esteem correlated with agentic but not with moral self-superiority. The difference between the correlations was significant for positive traits, $z = 3.41$, $p < .001$, and marginal for negative traits, $z = 1.92$, $p = .054$.

Using exploratory repeated measures regression analysis on moral and agentic self-superiority scores (General Linear Model in SPSS), we examined whether people with high self-esteem showed self-superiority across the board whereas those with lower self-esteem only did so on morality. As expected, facet (morality vs agency) interacted with self-esteem, $F(132) = 8.65$, $p = .004$, $\eta_p^2 = .06$. Participants generally claimed moral self-superiority, but the higher their self-esteem was, the more they also claimed agentic self-superiority (Figure 1). We determined the range of self-esteem levels on which the morality-agency difference was significant (Johnson-Neyman analysis, Model 2 in MEMORE, 5,000 bootstrap samples; Hayes, 2018; Johnson & Fay, 1950). The morality-agency difference was significant for self-esteem scores below 1.58.

Trait properties of morality vs agency

We next ran four separate 2 (valence) by 4 (facet) repeated-measures ANOVAs on each of the four trait properties (controllability, verifiability, frequency of feedback, and ambiguity). We found a main effect of facet in each of these ANOVAs, Fs ≥ 5.76, ps < .001, η_p^2s ≥ .04. As preregistered, we followed up with analyses contrasting morality vs agency. Participants perceived moral (vs agentic) traits as more controllable, $F(1, 133) = 47.06$, $p < .001$, $\eta_p^2 = .26$; less easily verifiable, $F(1, 133) = 42.59$, $p < .001$, $\eta_p^2 = .24$, and less often the subject of feedback, $F(1, 133) = 26.05$, $p < .001$, $\eta_p^2 = .16$. However, we found no evidence that they perceived moral traits as more ambiguous than agentic ones, $F(1, 132) = 0.08$, $p = .775$, $\eta_p^2 = .01$.

Facet also interacted with valence in these ANOVAs, Fs ≥ 2.98, ps ≤ .031, η_p^2s ≥ .02. For the ANOVAs conducted on controllability and verifiability, the morality-agency difference occurred for both positive and negative traits; controllability: Fs(1, 133) ≥ 24.14, ps < .001, η_p^2s ≥ .15; verifiability: Fs(1, 133) ≥ 21.41, ps < .001, η_p^2s ≥ .14. However, the difference was greater for controllability for negative traits and greater for verifiability for positive traits. For the ANOVAs conducted on frequency of feedback and ambiguity, a morality-agency difference occurred for positive traits. Participants rated positive agentic (vs moral) traits as more frequently the subject of feedback, $F(1, 133) = 30.62$, $p < .001$, $\eta_p^2 = .19$; and as more ambiguous, $F(1, 132) = 4.03$, $p = .047$, $\eta_p^2 = .03$. We found no evidence for a difference between negative agentic and moral traits on either frequency of feedback, $F(1, 133) = 3.42$, $p = .067$, $\eta_p^2 = .03$; or ambiguity, $F(1, 132) = 2.66$, $p = .105$, $\eta_p^2 = .20$.

Of note, the main effect of valence was significant for all the ANOVAs conducted on the properties, Fs ≥ 4.78, ps ≤ .031, η_p^2s ≥ .04. Positive (vs negative) traits were rated as more controllable ($M_{pos} = 4.38$, $SD = 0.74$; $M_{neg} = 4.00$, $SD = 0.81$), easier to verify ($M_{pos} = 4.68$, $SD = 0.69$; M_{neg} =

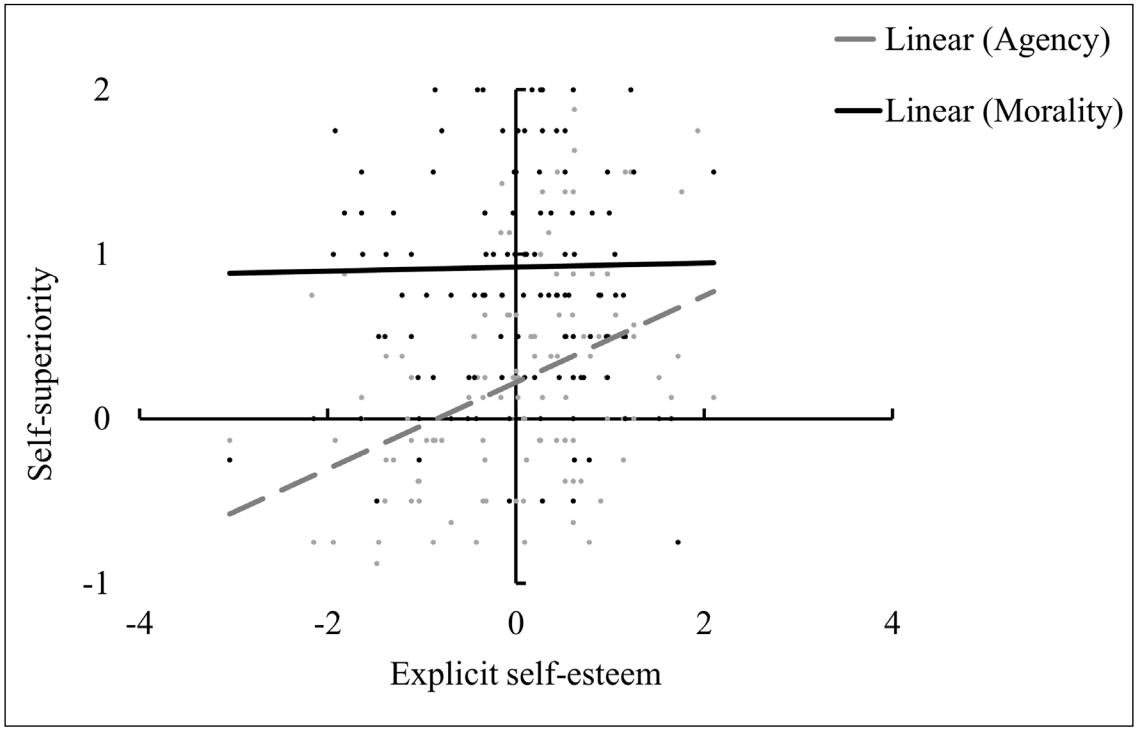

Figure 1 Moral and Agentic Self-Superiority as a Function of Explicit Self-Esteem in Study 1.

4.38, *SD* = 0.61), more frequently the subject of feedback (M_{pos} = 4.33, *SD* = 0.77; M_{neg} = 3.65, *SD* = 0.86), and more ambiguous (M_{pos} = 4.34, *SD* = 0.99; M_{neg} = 4.16, *SD* = 0.76).

Trait properties as mediators of the difference between moral vs agentic self-superiority

We next conducted multiple mediation models (using the MEMORE macro) to explore whether any of the four different trait properties mediated the difference between moral and agentic self-superiority. We ran eight of these models: one each for each of the four trait properties (controllability, verifiability, frequency of feedback, and ambiguity) and conducted these separately for positive and negative traits. In these analyses, facet (agency vs morality) was conceptually the predictor; the difference on self-superiority for the two facets was the outcome; and the difference score on the trait property between facets (e.g., controllability for moral traits vs controllability for agentic traits) was the mediator in each of the models. We did not find significant indirect effects (see Table 2).

Trait properties as moderators of the correlation between self-esteem and self-superiority

We examined whether a stronger correlation between explicit self-esteem and self-superiority on a facet reflects differing levels of trait properties among facets.

MEDIATOR	IV→MEDIATOR[a]	MEDIATOR→DV[b]	INDIRECT EFFECT		
			B	*SE*	95% CI[c]
	STUDY 1				
Positive traits					
Controllability	0.54 ***	−0.09	−0.05	0.05	[−.133, .049]
Verifiability	−0.71 ***	−0.07	0.05	0.05	[−.152, .057]
Feedback	−0.59 ***	−0.06	0.03	0.05	[−.055, .140]
Ambiguity	−0.24 *	−0.02	0.01	0.02	[−.033, .051]
Negative traits					
Controllability	0.74 ***	−0.02	−0.01	0.06	[−.131, .100]
Verifiability	−0.56 ***	−0.07	0.04	0.05	[−.042, .136]
Feedback	−0.19	−0.05	0.01	0.02	[−.036, .054]
Ambiguity	0.19	−0.11	−0.02	0.02	[−.074, .009]
	STUDY 2				
Positive traits					
Controllability	**0.89 *** **	**0.07 ***	**0.06**	**0.03**	**[.006, .126]**
Verifiability	**−0.67 *** **	**0.12 *** **	**−0.08**	**0.02**	**[−.125, −.035]**
Ambiguity	−0.22 ***	−0.07	0.02	0.01	[−.003, .043]
Breadth	−0.12	0.14 ***	−0.02	0.01	[−.035, .001]
Typicality[d]	**0.16 *** **	**0.13 ** **	**0.02**	**0.01**	**[.002, .048]**
Grantedness[e]	**1.03 *** **	**0.13 *** **	**0.14**	**0.04**	**[.055, .223]**
Negative traits					
Controllability	1.12 ***	0.06	0.06	0.05	[−.026, .167]
Verifiability	−0.15 *	0.05	−0.01	0.01	[−.025, .008]
Ambiguity	−0.56 ***	−0.06	0.03	0.03	[−.024, .091]
Breadth	−0.27 ***	0.08	−0.02	0.02	[−.055, .006]
Typicality[d]	0.48 ***	−0.06	−0.03	0.02	[−.071, .016]
Grantedness[e]	**−0.55 *** **	**−0.18 *** **	**0.10**	**0.03**	**[.046, .164]**

Table 2 Mediation of Effect of Facet (Agency, Morality) on Self-Superiority by Trait Property.

Note. [a]IV→mediator = Coefficient of path from facet (morality, agency) to property. [b]Mediator→DV = Coefficient of path from property to self-superiority. [c]Bootstrap results; the path is significant if the CI excludes zero. [d]Typicality = Being typically human. [e]Grantedness = Taken-for-grantedness. *p < .05, **p < .01, ***p < .001.

To do so, we conducted models examining whether trait properties moderated the relationship between self-esteem and overall self-superiority. Eight equations were run; in each, self-esteem was the outcome; either mean self-superiority across all positive or all negative traits was the predictor; and one of the four different trait properties was the moderator. We used standardized self-superiority scores and trait properties ratings to avoid multicollinearity (Daoud, 2017). We did not find significant interactions (see Table 3).

DISCUSSION

As predicted, self-superiority beliefs were greater on morality (vs agency) traits; and agentic (vs moral) self-superiority beliefs correlated more strongly with self-esteem. Participants rated moral traits as more controllable, less easily verifiable, and (for positive traits) less often the subject of feedback. Surprisingly, they did not find moral traits more ambiguous than agentic traits. In fact, they found positive moral traits less ambiguous than positive agentic traits.

MODERATOR	R-SQUARED	ESTIMATE	*SE*	95% CI[a]	*P*[b]
	STUDY 1				
Positive traits					
Controllability	.001	−0.04	0.10	[−.261, .143]	.681
Verifiability	.004	0.06	0.09	[−.122, .213]	.431
Feedback	.003	−0.05	0.08	[−.203, .131]	.549
Ambiguity	.017	0.11	0.07	[−.050, .236]	.121
Negative traits					
Controllability	.001	−0.01	0.06	[−.143, .097]	.857
Verifiability	.013	0.10	0.06	[−.023, .232]	.183
Feedback	.011	−0.10	0.07	[−.240, .050]	.207
Ambiguity	.001	0.01	0.09	[−.146, .191]	.939
	STUDY 2: CORRELATION WITH RSES				
Positive traits					
Controllability	.001	0.01	0.04	[−.087, .088]	.824
Verifiability	.003	−0.05	0.04	[−.143, .022]	.286
Ambiguity	.001	0.02	0.05	[−.077, .113]	.660
Breadth	.006	−0.07	0.05	[−.168, .026]	.126
Typicality[c]	.001	−0.04	0.05	[−.149, .049]	.490
Grantedness[d]	.001	−0.03	0.04	[−.116, .044]	.589
Negative traits					
Controllability	.001	−0.03	0.03	[−.090, .047]	.499
Verifiability	**.013**	**0.11**	**0.05**	**[.009, .208]**	**.029**
Ambiguity	.001	−0.02	0.05	[−.115, .074]	.669
Breadth	.001	−0.02	0.05	[−.122, .079]	.658
Typicality[c]	.001	−0.02	0.05	[−.118, .081]	.750
Grantedness[d]	.001	−0.01	0.04	[−.082, .075]	.941
	STUDY 2: CORRELATION WITH LSES				
Positive traits					
Controllability	.005	−0.06	0.05	[−.168, .038]	.199
Verifiability	.001	0.01	0.06	[−.109, .112]	.841
Ambiguity	.002	−0.04	0.05	[−.148, .052]	.359
Breadth	.001	0.02	0.05	[−.074, .128]	.673
Typicality[c]	**.011**	**−0.11**	**0.05**	**[−.214, −.019]**	**.046**

(Contd.)

MODERATOR	R-SQUARED	ESTIMATE	*SE*	95% CI[a]	*P*[b]
	STUDY 1				
Grantedness[d]	.004	−0.05	0.05	[−.148, .035]	.247
Negative traits					
Controllability	**.014**	**−0.09**	**0.04**	**[−.156, −.002]**	**.023**
Verifiability	**.016**	**0.12**	**0.05**	**[.028, .211]**	**.017**
Ambiguity	.008	−0.08	0.05	[−.166, .006]	.091
Breadth	.003	0.05	0.05	[−.046, .133]	.324
Typicality[c]	.004	−0.06	0.04	[−.137, .024]	.253
Grantedness[d]	.003	−0.04	0.06	[−.129, .086]	.337

Table 3 Moderation of Relationship between Explicit Self-Esteem and Self-Superiority by Trait Property.

Note. [a]Bootstrap results; the path is significant if the CI (Confidence interval) excludes zero, [b]Original sample results; in this analysis, the path is significant if $p < .05$. [c]Typicality = Being typically human. [d]Grantedness = Taken-for-grantedness.

We did not find evidence that these differences accounted for the morality-agency difference in perceived self-superiority. We also did not find any evidence that trait properties moderated the relationship between self-esteem and self-superiority.

However, Study 1 had several limitations. One was the rather modest sample size. Although the achieved sample size was not problematic for the power of the ANOVAs, it may have been problematic for the power of the correlational analyses. Moreover, the self-superiority scales were unsatisfactorily reliable for friendliness, ability, and assertiveness, perhaps due to the limited number of traits per facet. Even more importantly, Study 1 confounded trait valence with trait content as the positive and negative traits came from different trait continua. Yet another limitation was that we operationalized trait ambiguity as the number of different types of behaviors that a trait encompasses. As noted in the introduction, ambiguity may also be understood as being subject to interpretation. Some participants may have used the definition that the instructions provided, and thus rated what some researchers call 'trait breadth', whereas others may have used a personal understanding of 'ambiguity' as being subject to interpretation.

We addressed these limitations in Study 2. In that study, we also sought to replicate the surprising findings concerning ambiguity before drawing firm conclusions about them, and to examine some additional trait properties. We therefore postpone a more in-depth discussion until after presenting Study 2.

STUDY 2

Study 2 conceptually replicated Study 1 while addressing the potential methodological limitations that we described in the discussion of Study 1. We present a comparison of the designs of Study 1 and Study 2 in Table 4. As shown in that table, Study 2 disentangled the two meanings of trait ambiguity (calling one of them 'breadth' for clarity). It also included more stimulus traits per facet-valence combination than Study 1, and used positive and negative traits with matched contents (i.e., opposite poles on the same continuum). In addition, Study 2 involved a considerably larger sample to optimize the power of the correlational analyses. To keep the experimental session doable for participants, given the larger number of trait properties under study, we no longer examined the role of frequency of feedback.

Study 2 thus tested the prediction that participants would rate moral (vs agentic) traits as more controllable, less easily verifiable, more ambiguous (more open to interpretation), broader (applicable to more behaviors or contexts), and more typically human. Even more importantly, the study tested the prediction that one or several of these variables would account for the morality-agency difference in perceived self-superiority and the stronger correlation of agentic (vs moral) self-superiority with self-esteem.

In Study 2, we also explored 'taken for granted' as another property of the traits. We examine whether participants considered moral and agentic traits to be taken for granted to different extents, and if that difference could account for the differences in morality-agency strength of perceived self-superiority and in the correlation of self-superiority beliefs with self-esteem.

METHOD

Participants

Three hundred fifty-nine bachelor students at KU Leuven participated for course credit. As preregistered, we excluded responses of participants whose response time deviated more than three *SD*s from the mean ($n = 4$), who did not reach the end of the survey ($n = 30$), who indicated having completed the survey not seriously at all ($n = 4$), and/or who knew or guessed the rationale

	STUDY 1	STUDY 2
Trait properties	Controllability Verifiability Breadth Frequency of feedback	Controllability Verifiability Ambiguity/Breadth Being typically human Taken-for-grantedness
Trait list	Positive and negative traits are from different continua (e.g., loyal vs selfish). Two positive and two negative traits for each of the four facets. Four trait lists.[a]	Positive and negative traits are from same continua (e.g., loyal vs disloyal). Four positive and four negative traits for each of the four facets. Two trait lists.[a]

Table 4 Methodological Differences between Studies 1 and 2.

Note. [a]Full items lists in Supplemental Materials.

of the implicit self-esteem measures (n = 5). This left 316 responses (84% women, M_{age} = 18.92, SD_{age} = 1.96). About half of all students enrolled in the course in the context of which we conducted this study participated in the study. Sensitivity analyses revealed that there was 80% power to detect a small difference between two within-subjects valence conditions (f = 0.08) and a minimum correlation of r = .16.

Materials and design

Trait items

Each participant responded to one of two stimulus lists. We constructed these by taking, for each list, either the positive pole (e.g., loyal) or the negative pole (e.g., disloyal) of each of 32 bipolar trait continua. Each list contained, in randomized orders, four positive and four negative traits per facet. Thus, the positive traits that occurred in one list and the negative traits that occurred in the other list came from the same bipolar continuum. The Cronbach's alphas of the self-superiority questionnaire per facet ranged from .66 to .78.

Self-superiority and self-esteem

We measured self-superiority and self-esteem as in Study 1, except that we did not combine Rosenberg (RSES) and Lifespan (LSES) scores. As preregistered for Study 2, we did so to allow a more direct comparison between earlier research on the relationships of self-superiority beliefs with self-esteem and our findings.

Trait properties

We assessed the perceived controllability and verifiability of the traits as in Study 1, with minimal changes in the wording of instructions. We had participants rate the traits' ambiguity, breadth, being typically human, and taken-for-grantedness, where 1 = *very unambiguous*, *very narrow*, *not typically human at all*, *not taken for granted at all*; and 7 = *very ambiguous*, *very broad*, *completely typically human*, *completely taken for granted*. The instructions stated that a trait was ambiguous if its meaning was open to interpretation such that different people could understand different things by it; broad if it was applicable to many behaviors in various situations; typically human if it only occurred in humans and not animals; and taken for granted if one could expect everyone to have that trait without question.

Procedure and design

The study again had a 2 (valence: positive, negative) × 4 (facet: morality, friendliness, ability, assertiveness) within-subjects design. The procedure was as in Study 1, except that the task order was as follows: self-superiority questionnaire, three trait property tasks, self-esteem measures, three more trait property tasks. The order of the trait property tasks varied following a Latin square.

RESULTS AND DISCUSSION

Analyses closely paralleled those conducted in Study 1. Besides the morality-agency contrasts, we also preregistered contrasts between morality and ability and between morality and assertiveness. We report these in the Supplemental Materials for brevity.

Moral vs agentic self-superiority and their correlations with self-esteem

The 2 (valence) × 4 (facet) doubly-repeated measures on self-superiority scores revealed a main effect of facet, $F(3, 315) = 176.07$, $p < .001$, $\eta_p^2 = .36$. Perceived self-superiority was again greater on morality than on agency, $F(1, 315) = 387.10$, $p < .001$, $\eta_p^2 = .55$. Facet interacted with valence, $F(3, 315) = 8.26$, $p < .001$, $\eta_p^2 = .03$ (the facet effect was bigger for negative traits), but the morality-agency contrast was significant for both valences, Fs(1, 315) ≥ 269.41, ps < .001, η_p^2s ≥ .46. The main effect of valence was significant, $F(1, 315) = 47.82$, $p < .001$, $\eta_p^2 = .13$, with greater self-superiority on negative traits (M = 0.67, SD = 0.73) than on positive traits (M = 0.46, SD = 0.57).

Scores on the RSES and LSES correlated more strongly with agentic (vs moral) self-superiority. This was true for positive traits, $z_{RSES} = 5.83$, $p < .001$, $z_{LSES} = 4.84$, $p < .001$, and negative traits, $z_{RSES} = 6.83$, $p < .001$, z_{LSES} =

4.49, $p < .001$. Exploratory repeated measures regression analyses on moral and agentic self-superiority scores yielded interactions of facet (morality vs agency) with standardized scores on the RSES and LSES, $F_{RSES}(314) = 44.62$, $p < .001$, $\eta_p^2 = .12$, $F_{LSES}(314) = 24.15$, $p < .001$, $\eta_p^2 = .07$. The morality-agency difference in self-superiority was larger as self-esteem was lower (see Figure 2 for RSES and Figure 3 for LSES). The morality-agency difference was significant for standardized RSES scores below 2.38; it was significant across the entire range of LSES scores (Johnson-Neyman analyses; Johnson & Fay, 1950).

Study 2 thus replicated the main findings of Study 1. We again found greater perceived self-superiority on moral traits, and a stronger correlation between self-esteem and agentic self-superiority beliefs. The lower participants' self-esteem, the greater the morality-agency difference in their self-superiority beliefs.

Trait properties of morality vs agency

As in Study 1, we again ran separate 2 (valence) by 4 (facet) repeated-measures ANOVAs on each of the six trait properties: controllability, verifiability, ambiguity, breadth, being typically human, and taken-for-grantedness. We found a main effect of facet on all trait properties, Fs ≥ 22.96, ps $< .001$, η_p^2s $\geq .07$. Participants found moral (vs agentic) traits more controllable, $F(1, 314) = 47.06$,

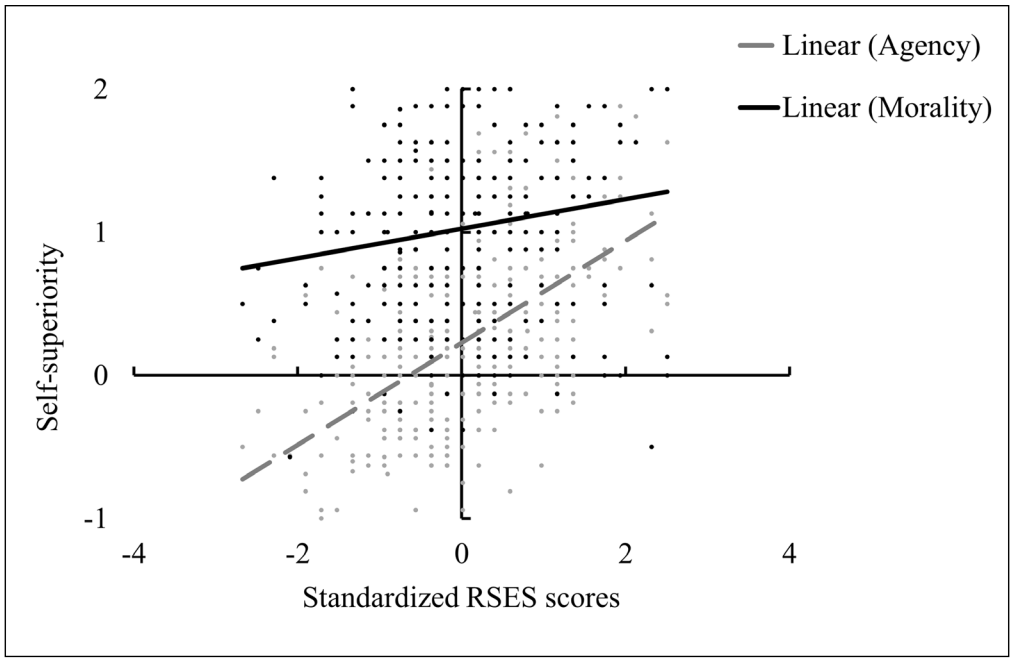

Figure 2 Moral and Agentic Self-Superiority as a Function of Self-Esteem (RSES) in Study 2.

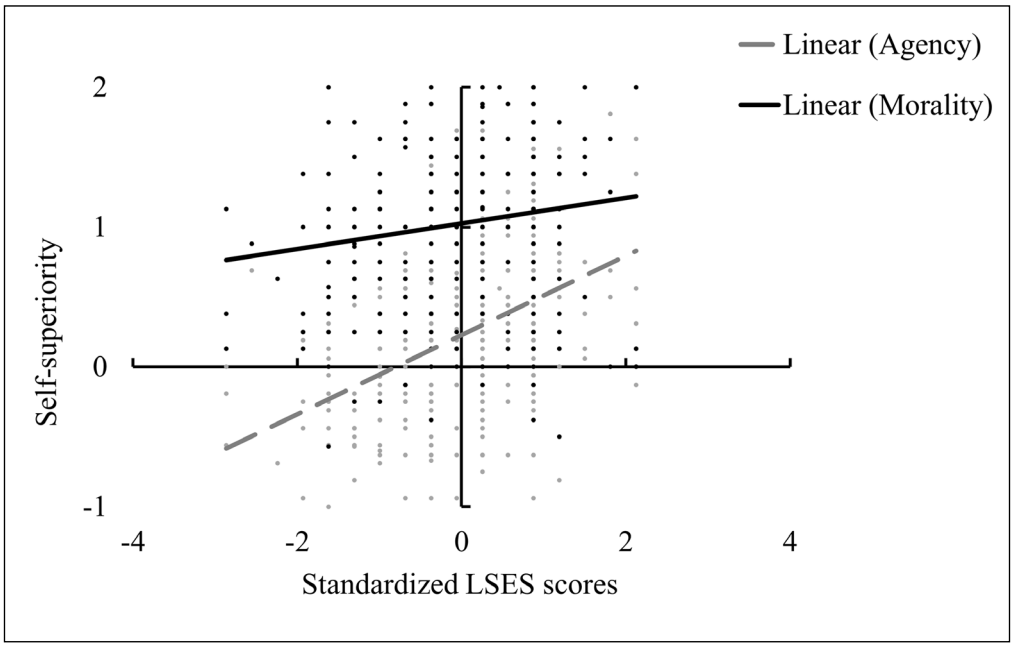

Figure 3 Moral and Agentic Self-Superiority as a Function of Self-Esteem (LSES) in Study 2.

$p < .001$, $\eta_p^2 = .26$; more typically human, $F(1, 315) = 60.42$, $p < .001$, $\eta_p^2 = .16$; and more to be taken for granted, $F(1, 315) = 38.56$, $p < .001$, $\eta_p^2 = .11$. They also found moral (vs agentic) traits less easily verifiable, $F(1, 315) = 65.08$, $p < .001$, $\eta_p^2 = .17$; less ambiguous, $F(1, 315) = 76.08$, $p < .001$, $\eta_p^2 = .20$; and less broad, $F(1, 315) = 20.19$, $p < .001$, $\eta_p^2 = .06$.

Facet interacted with valence on all properties, $Fs \geq 3.42$, $ps \leq .017$, $\eta_p^2 s \geq .01$. The facet effect on controllability, ambiguity, breadth, and being typically human was greater for negative than for positive traits, while the facet effect on verifiability was greater for positive than for negative traits. Still, the just described morality-agency differences held for both valences on controllability, $Fs(1, 314) \geq 132.49$, $ps < .001$, $\eta_p^2 s \geq .30$; verifiability, $Fs(1, 315) \geq 7.24$, $ps \leq .008$, $\eta_p^2 s \geq .02$; ambiguity, $Fs(1, 315) \geq 12.33$, $p < .001$, $\eta_p^2 \geq .04$; and being typically human, $Fs(1, 315) \geq 5.87$, $ps \leq .016$, $\eta_p^2 s \geq .02$. On breadth, we did not find a significant morality-agency difference among positive traits, $F(1, 315) = 3.48$, $p = .063$, $\eta_p^2 = .01$, while we did find that difference among negative traits, with participants rating moral traits as less broad than agentic ones, $F(1, 315) = 21.20$, $p < .001$, $\eta_p^2 = .06$. On taken-for-grantedness, the direction of the morality-agency difference depended on trait valence. For positive traits, participants took moral traits more for granted than agentic ones, $F(1, 315) = 214.79$, $p < .001$, $\eta_p^2 = .41$, whereas for negative traits, they took agentic traits more for granted than moral ones, $F(1, 315) = 79.13$, $p < .001$, $\eta_p^2 = .20$.

The main effect of valence was significant on all properties, $Fs \geq 44.58$, $ps < .001$, $\eta_p^2 s \geq .12$, except ambiguity, $F(1, 315) = 0.09$, $p = .767$, $\eta_p^2 = .01$; and being typically human, $F(1, 315) = 3.32$, $p = .070$, $\eta_p^2 = .01$. Participants found positive (vs negative) traits more controllable ($M_{pos} = 4.38$, $SD = 0.67$; $M_{neg} = 4.10$, $SD = 0.68$), easier to verify ($M_{pos} = 4.78$, $SD = 0.62$; $M_{neg} = 4.42$, $SD = 0.80$), broader ($M_{pos} = 4.81$, $SD = 0.76$; $M_{neg} = 4.38$, $SD = 0.90$), and more taken for granted ($M_{pos} = 4.08$, $SD = 0.87$; $M_{neg} = 3.02$, $SD = 0.81$).

Study 2 thus replicated the findings of Study 1 that participants found moral traits more controllable and less easily verifiable than agentic traits, but not more ambiguous. In fact, participants in Study 2 found moral traits less ambiguous and (negative traits) less broad than agentic traits. They also found moral traits more typically human than agentic traits, and took positive moral traits more for granted than positive agentic traits, and negative agentic traits more for granted than negative moral traits.

Trait properties as mediators of the difference between moral vs agentic self-superiority

Once again using the MEMORE macro, we found that for positive traits, the indirect effects via controllability, being typically human, and taken-for-grantedness were significant (Table 2). Participants rated positive moral traits as more controllable, more typically human, and more taken for granted than positive agentic traits, and that was associated with greater self-superiority. However, the direct effect of facet remained significant in all cases, $B_{controllability} = 0.71$, $SE = 0.06$, 95% CI [.596, .815], $B_{typicality} = 0.75$, $SE = 0.05$, 95% CI [.656, .839], $B_{taken\text{-}for\text{-}grantedness} = 0.63$, $SE = 0.06$, 95% CI [.514, .748], indicating that the mediation of the facet effect by controllability, being typically human, and taken-for-grantedness was only partial. Participants also rated positive moral (vs agentic) traits as less easy to verify, and less verifiability was associated with lower, rather than higher self-superiority.

For negative traits, an indirect effect on self-superiority via taken-for-grantedness was significant. Participants took negative agentic traits more for granted than negative moral traits, and that was associated with lower self-superiority. Again, the direct effect of facet remained significant, $B = 0.72$, $SE = 0.05$, 95% CI [.613, .827], indicating partial mediation.

The fact that Study 2 yielded mediation of the morality-agency difference in perceived self-superiority by controllability and by verifiability (for positive traits), whereas Study 1 did not, may be due to the greater reliability of the scales and the greater power of Study 2. We also found greater self-superiority for positive traits that participants consider typically human and taken for granted and for negative traits that they do not consider taken for granted.

Trait properties as moderators of the correlation between self-superiority and self-esteem

We again examined whether a stronger correlation between self-esteem and self-superiority on a facet reflects differing levels of trait properties among facets. In each, either Rosenberg Self-Esteem Scores (RSES) or Lifespan Self-Esteem Scores (LSES) was the outcome; either mean self-superiority across all positive or all negative traits was the predictor; and one of the six different trait properties was the moderator, yielding a total of 24 equations. In the models with Rosenberg Self-Esteem Scores (RSES) as the outcome, the only significant interaction of self-superiority and a property occurred for negative traits, and involved trait verifiability (Table 3). Self-superiority on negative traits that were easier to verify correlated more strongly with RSES scores. In the models with Lifespan Self-Esteem Scores (LSES) as the outcome, several interactions were significant. Self-superiority on positive traits that were less typically human and negative traits that were less controllable and easier to verify correlated more strongly with LSES scores.[2]

We probed significant moderation effects using simple slope analyses. Self-esteem was significantly positively associated with self-superiority across different levels of trait properties (*ps* ≤ .001). Thus, Study 2 yielded several significant interactions whereas Study 1 had not.

In Study 2, we also tested preregistered moderation models separately for positive and negative traits to examine whether the correlation between trait properties and self-superiority would be stronger for people with lower (vs higher) self-esteem. The bootstrap method did not reveal any significant interactions involving self-esteem (RSES or LSES).

GENERAL DISCUSSION

Across two studies, we replicated a pattern of greater perceived self-superiority on moral (vs agentic) traits as well as a stronger correlation between self-esteem and agentic (vs moral) self-superiority beliefs. Regression analyses revealed that participants generally showed moral self-superiority, but that only participants with relatively high self-esteem also showed agentic self-superiority. The morality-agency difference thus seems to have been driven by participants with lower self-esteem showing no or weak agentic self-superiority.

Moral and agentic traits differed on various trait properties, but only controllability, being typically human, and taken-for-grantedness partially mediated the morality-agency difference. Trait verifiability, if anything, suppressed rather than accounted for the difference (Study 2). This finding runs counter the often-made assumption that people show greater self-superiority beliefs on attributes that are not easily verifiable (Sedikides & Alicke, 2012), and adds nuance to earlier null-findings concerning the relationship between trait controllability and verifiability on the one hand, and self-superiority on the other hand (Van Lange & Sedikides, 1998).

Some of the observed effects involved interactions between facets or trait properties with trait valence. Although these interactions were generally a matter of quantity rather than of quality of effects, they do suggest that self-superiority on positive and negative traits are not interchangeable (cf. Hoorens, 1996). As suggested by the results for the 'taken for granted' trait property in Study 2, it seems that self-superiority beliefs on positive traits reflect a belief of the type 'just like others, only more so' on traits taken for granted (McFarland & Miller, 1990), whereas self-superiority beliefs on negative traits reflect a belief that the self exhibits less than the usual amount of traits that are not taken for granted. We therefore suggest that future research on self-superiority beliefs should systematically include both positive and negative traits, and explore the differences between the valences.

SO WHY IS SELF-SUPERIORITY GREATER ON MORALITY, BUT LESS ASSOCIATED WITH SELF-ESTEEM?

Although we did find some partial mediation, none of the trait properties under study can fully account for the greater perceived self-superiority on morality than on agency. The question thus remains why many people show greater self-superiority beliefs on morality than on agency. Purely cognitive explanations for self-superiority beliefs have difficulties explaining this difference, just as they would have difficulty explaining the greater self-superiority on negative than on positive traits in Study 2, where the positive and the negative traits were more comparable than in Study 1 (for other criticisms of these explanations, see, e.g., Brown, 2012; Sedikides & Alicke, 2012).

To explain the morality-agency difference, a cognitive egocentrism account (which assumes that people selectively recruit evidence for their own good attributes and/or for other people's bad attributes) would require the additional assumption that people compare their moral attributes in a more egocentric manner than their relative agentic attributes. Of course, this assumption is unnecessary if one assumes that people simply have more leeway to selectively recruit relevant information in the domain of morality. However, that would fly in the face of our finding that, if anything, participants found the agentic traits we used as more ambiguous in various senses of the word (Studies 1–2). It is also noteworthy that most evidence for cognitive egocentrism in self-other comparisons comes from the agentic domain (such as judgments of actual or expected relative performances; e.g., Dunning & Hayes, 1996; Krueger, 2003)—which happens to be the domain where self-superiority beliefs are *weakest*.

A social projection account assumes that people project their own position on a trait onto others but attribute positive traits less and negative traits more to the average other than to themselves (Heck & Krueger, 2015). Explaining the morality-agency difference would thus require the assumption that people project their moral attributes more onto others than their agentic attributes. One might conjecture that this is quite likely, because people arguably project more when they lack sufficient information about other people's true standing on the trait and because people consider moral traits less verifiable than agentic traits. Some evidence has indeed been offered that social projection may be particularly strong for moral traits (Thielmann et al., 2020). However, Thielmann et al.'s study operationalized social projection as the correlation between self-reports and judgments of others; moreover, if anything, we found that lower verifiability was associated with perceptions of lower rather than greater self-superiority in Study 2.

We therefore see two more viable explanations for the morality-agency difference. One is that morality is so important to people that they massively claim self-superiority on it. The absence of a correlation with self-esteem then reflects the higher, rather than the lower importance for people's self-esteem of morality than of agency, and may to some extent even reflect a ceiling effect in self-superiority beliefs (cf. Hauke, 2017)—or at least a restriction of range. Support for that interpretation comes from the observation that even though moral self-superiority did not covary with self-esteem while agentic self-superiority did, moral self-superiority exceeded agentic self-superiority at all self-esteem levels.

Another potential explanation builds on the finding that self-threat enhances self-superiority beliefs (Brown, 2012, Study 5) and that having to judge one's own morality as compared to other people's morality is more threatening than having to judge one's own agency as compared to other people's agency. This possibility, which is based on a homeostatic model of identity protection (Sedikides, 2021), would unfold as follows: Merely being asked to judge the self may be generally threatening to one's positive self-identity because the question implies that one's possession of positive traits and lack of negative traits is not considered self-evident. Having to judge the self *as compared to others* may enhance the threat because it forces people to treat others as the standard of comparison, rather than using their favorite point-of-reference, themselves (Sedikides et al., 2021). Consistent with this assumption, directly measured perceived self-superiority is typically smaller if the direction of comparison is being reversed such that people are asked to compare others to themselves (Pahl & Eiser, 2005). It should be noted that this observation also runs counter to the social projection view because explicitly asking people to compare others to themselves encourages them to consider others in the light of how they view themselves, and arguably does so more than asking people to judge themselves compared to others does.

Being asked the question about *morality* rather than about agency may then even further enhance the self-threat, because people above all like to take for granted that they are morally good (Strohminger et al., 2017). For example, there is evidence that people feel more threatened when their morality (vs their agency) seems to be called into question (e.g., Hoorens et al., 2019; Van Damme et al., 2016, 2017).

In sum, it seems possible that merely having to compare the self to others in the domain of morality is a rather seriously ego-threatening experience. Such threats are problematic because maintaining a positive self-identity is important for people's well-being (Sedikides, 2021). Threats to this positive self-identity may therefore provoke psychologically adaptive defense mechanisms, e.g., spontaneously occurring self-affirmation (Emanuel et al., 2018; Jessop et al., 2023). Expressing self-superiority beliefs may be among the most readily available and most easily applicable types of spontaneous self-affirmation. One implication of this interpretation would be that self-superiority beliefs may be more prevalent or greater in the lab, where people are explicitly being asked to compare their morality to other people's morality, than in everyday life. However, the evidence for social comparison processes in self-judgments in everyday life shows that the potential inflation of self-superiority beliefs in the lab does not mean that these beliefs are merely an experimental artifact.

THE (UN-)IMPORTANCE OF THE RATIONALITY AND ACCURACY OF SELF-SUPERIORITY BELIEFS

We studied self-superiority beliefs without seeking to identify, at the level of individual participants, the proportion of these beliefs that might be considered inaccurate or statistically or psychometrically irrational. Some researchers may construe that as a limitation of our research. However, it was a deliberate choice.

Researchers who feel that it is important to distinguish between presumably rational and irrational aspects of self-superiority often equate rationality with accuracy. That is reflected in proposals to conceptually distinguish between self-superiority *bias* and *error* (Heck & Krueger, 2015, 2016), with *bias* denoting what we prefer to call *belief*, and with the observation that self-superiority beliefs on given attributes can generally be accurate, that is, when the distribution of the attributes is skewed (e.g., Krueger & Funder, 2004; Krueger & Wright, 2011).

We readily acknowledge that in some contexts it is important to distinguish between accurate and inaccurate self-superiority beliefs (as suggested by Heck & Krueger, 2015; Krueger et al., 2017; Tappin & McKay, 2017). However, accuracy is by far not always the critical issue. One reason is that accuracy is in many cases unknown to individuals themselves and to the people around them. Another, more conceptually important reason is that rationality does not always boil down to accuracy (Krueger & Funder, 2004). Even a more general idea of rationality, such as rationality conceived as following logically or statistically defensible cognitive strategies (e.g., in the case of self-superiority beliefs: social projection as a strategy to estimate someone else's position on trait continua; Heck & Krueger, 2015), may not always be the main issue.

We suggest that the main question about self-superiority beliefs in many contexts does not concern their statistical or axiomatic validity, but their adaptivity or, to use the rationality terminology, their ecological rationality (Gigerenzer, 2021, 2023). In our view, at least part of the scientific relevance of self-superiority beliefs lies in their potential signaling value in terms

of consequences for people's health, well-being, and individual and interpersonal behavior. This view aligns with the statement of Heck and Krueger (2016, p. 327) that "The question of adaptiveness is whether the bias will, on balance, produce desirable consequences for the self-enhancer" (cf. also the observation of Krueger and Funder, 2004, that self-superiority beliefs often come with their own hedonic rewards). If these consequences are adaptive, self-superiority beliefs may be called rational even if they are inaccurate or do not follow statistical or psychometric principles.

The conjecture that self-superiority beliefs may be a form of spontaneous self-affirmation points in the direction of their adaptiveness. Self-affirmation has indeed been shown to have a variety of consequences that are beneficial to the individual and those around that individual (Cohen & Sherman, 2014). For example, self-affirmation eradicates defensive stereotyping (Hoorens et al., 2021), enhances well-being (Emanuel et al., 2018; Jessop et al., 2023), and may be associated with lower maladaptive information avoidance (Hoorens et al., 2022). Thus, there is reason to at least explore the potentially adaptive, and thus rational, nature of self-superiority beliefs.

However, the benefits of self-superiority beliefs may already be considerable even when these beliefs do not engender the intrapersonal benefits of (other types of) self-affirmation. As already discussed, self-superiority beliefs may indeed play an important role in the psychological homeostasis that humans need to maintain a reasonable level of health and well-being (Sedikides, 2021). From that point of view, the question of how accurate they are in the light of objective evidence is relevant in a number of clearly delineated circumstances, but is not the main question to be asked about self-superiority beliefs.

LIMITATIONS AND FURTHER RESEARCH

Our research has various limitations, which we hope to address in future research. One is that most of our participants were young, female students from Belgium. Future research with a more diverse and balanced sample may help understanding to what extent the findings can be generalized.

The observed associations between trait properties, self-superiority beliefs, and self-esteem were correlational, and the same held true of the mediation analyses. Thus, the observed relationships should not be interpreted as firm evidence for a causal relationship (Fiedler et al., 2018). In ongoing research, participants are primed with positive or negative information related to their morality or agency in order to examine the impact on their state self-esteem. We also plan to manipulate the perceived properties of traits and examine how this affects the magnitude of perceived self-superiority on these traits. These experiments will complement existing correlational evidence.

We also readily acknowledge that the explanations that we suggested for the morality-agency difference in perceived self-superiority are speculative, given that the variables we proposed and examined in the current studies did not sufficiently explain that difference. Our lab aims to further explore alternative explanations in follow-up research. One explanation hinges on trait importance: Greater perceived self-superiority for morality reflects the greater importance of morality in people's self-view, whereas the stronger correlation of agentic self-superiority with self-esteem is independent of the importance of agency. Another contrasting explanation involves social desirability. It states that greater perceived self-superiority on morality reflects not greater importance, but greater social desirability, of morality vs agency for the self, while the stronger correlation of self-superiority on agency with self-esteem reflects the greater importance of agency than of morality.

CONCLUSION

We examined to what extent trait properties accounted for the differential magnitude of moral vs agentic self-superiority and their associations with self-esteem. Self-superiority was greater for positive moral (vs agentic) traits that were more controllable, typically human, and taken for granted, and for negative moral (vs agentic) traits that were less taken for granted. Self-esteem correlated more strongly with self-superiority on (agentic) traits that were easier to verify, less controllable, and less typically human. However, none of these trait properties completely explained the observed morality-agency gap, which is more likely to reflect the greater importance of morality for people's self-view and/or the threatening nature of having to compare oneself to others, particularly in the domain of morality.

DATA ACCESSIBILITY STATEMENT

All materials, data, syntaxes, and codebooks are available at https://osf.io/d2ft4/.

TRANSPARENCY STATEMENT

We reported how we determined the sample size and the stopping criterion. We reported all experimental conditions and variables, all data exclusion criteria and whether these were determined before or during the data analysis, and all outlier criteria and whether these were determined before or during data analysis.

PRE-REGISTRATION STATEMENT

We preregistered both studies before data collection; see https://osf.io/d2ft4/.

NOTES

1 We selected 46 traits from earlier research (Abele et al., 2008, 2016; Abele & Brack, 2013; Brambilla et al., 2011; Brown & Cai, 2010; Diehl et al., 2004; Goodwin et al., 2014; Melnikoff & Bailey, 2018; Phalet & Poppe, 1997; Tappin & McKay, 2017; Wojciszke, 2005; Wojciszke & Abele, 2008) with the criteria that they should unequivocally represent the facet and be commonly used. We also used 18 traits antonyms or synonyms of these.

2 As preregistered, we also replicated these moderation analyses with agentic and moral traits only (i.e., excluding friendly traits; see Supplemental Materials).

ADDITIONAL FILE

Supplementary materials are available at https://osf.io/d2ft4/.

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COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

Yujing Liang: conceptualization (equal); data curation (lead); formal analysis (lead); investigation (lead); methodology (equal); software (lead); visualization (lead); writing – original draft preparation (lead); writing – review & editing (equal).

Sara Hodges: conceptualization (equal); funding acquisition (supporting); methodology (equal); writing – review & editing (equal).

Aisha Dondeyne: writing – review and editing (supporting).

Vera Hoorens: conceptualization (equal); data curation (supporting); formal analysis (supporting); funding acquisition (lead); investigation (supporting); methodology (equal); project administration (lead); resources (lead); software (supporting); supervision (lead); writing – review & editing (equal).

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